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ABSTRACT

This book was developed to help educators and youth learn about career opportunities in the military. It is a compendium of military occupational, training, and career information and is designed for use by students interested in the military. The first section, military occupations, contains descriptions of 197 enlisted and officer occupations. Some of the occupations described here include: human services; media and public affairs; health care; engineering, science, and technical; administrative; service; vehicle and machinery mechanic; electronic and electrical equipment repair, construction, machine operator and precision work; transportation and material handling; combat specialities; executive, administrative, and managerial; and health diagnosing and treating practitioner. Students who have taken the Armed Services Vocational Aptitude Battery can use their scores to estimate their chances of qualifying for enlisted occupations. The second section, military career paths, describes the typical duties and assignments a person might expect when advancing along the path of a 20-year military career. While the military occupations section presents an overview of the typical job duties in a military occupation, the military career paths section offers a more comprehensive description of work performed at various stages of a career in the military. A title index, Dictionary of Occupational Titles (DOT) code indexes by DOT number and occupation as well as a glossary of military terms are attached. (RJM)

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Military Careers

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Military Careers

A Guide to Military Occupations and Selected Military Career Paths

1992-1994

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of Defense, Washington, D.C.

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Foreword

The Department of Defense recruits and trains approximately 200,000 enlisted members and officers each year, making it one of the largest employers in the U.S. *Military Careers* has been developed to help educators and youth learn about the many career opportunities the military has to offer. The book is a compendium of military occupational, training, and career information and is designed for use by students desiring to explore the military world of work.

Military Careers is a compilation of two previous books, *Military Career Guide* and *Military Career Paths*. The result is a single reference source for educators and students to use to learn about the diverse opportunities available to young people in the military. The first section, military occupations, contains descriptions of 197 enlisted and officer occupations. Students who have taken the Armed Services Vocational Aptitude Battery (ASVAB) can use their scores to estimate their chances of qualifying for enlisted occupations. The second section, military career paths, describes the typical duties and assignments a person might expect when advancing along the path of a 20-year military career. While the military occupations section presents an overview of the typical job duties in a military occupation, the military career paths section presents a more comprehensive description of work performed at various stages of a military career.

Many individuals contributed to the development and production of *Military Careers*. Primarily, we wish to thank the staff of Booz•Allen and Hamilton Inc. who contributed to this revision. Dr. Michael McDaniel managed contract support of the project. Ms. Signe Peterson served as the lead desktop publishing technician. The contributions of Ms. Susan Becker, Dr. Jeffrey Worst, Mr. Asif Jalil, and Mr. Eric Braverman are gratefully acknowledged.

Many others have contributed to this publication. Various members of the Defense Manpower Data Center, Personnel Testing Division, provided technical suggestions and editorial review of this publication. Valuable assistance in obtaining photographs for the book was provided by Major Mike Roddin, U.S. Army; Mr. Conrad Curry, U.S. Navy; Lieutenant Colonel Paul Cook, U.S. Air Force; and Gunnery Sergeant Vince Martinez, U.S. Marine Corps. The Manpower Accession Policy Working Group and their representatives closely read revisions of the document and obtained the necessary cooperation and approval from each of the Services. The Directorate for Accession Policy, Office of the Assistant Secretary of Defense (Force Management and Personnel), headed by Dr. W. S. Sellman, provided policy oversight for the program.

Finally, the project was directed by Dr. Janet Wall, Defense Manpower Data Center, Personnel Testing Division, Monterey, CA. Her invaluable guidance ensured the quality, accuracy, and utility of this book.

Christopher Jehn

Christopher Jehn
Assistant Secretary of Defense for
Force Management and Personnel

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Introduction to Military Careers

Introduction to Military Careers

Your future. It's coming just ahead. One of the important decisions you will need to make concerning your future is what type of career you might want to enter. In today's world, where there are hundreds of occupations to choose from, it is important to spend some time investigating different occupations that you might be interested in pursuing. In order to make an informed decision, you need information about different occupations. Career information resources are a good place to start. Career information resources contain detailed descriptions of occupations, including the type of duties performed, amount of education/training required, career advancement opportunities, and working conditions.

Military Careers is the leading career information resource for the military world-of-work. This book describes 197 enlisted and officer occupations. It contains information about the type of work performed, as well as employment, training, and career advancement opportunities for Army, Navy, Air Force, Marine Corps, and Coast Guard occupations. Because many military occupations are comparable to one or more civilian occupations, civilian counterparts are listed for all applicable military occupations.

Military Careers is organized into two sections:

- Military Occupations
- Military Career Paths

Military Occupations provides descriptions of 127 enlisted and 70 officer occupations. The section provides valuable information for each occupation, such as primary work activities, training provided, and work environment.

The Military Career Paths section describes the typical duties and assignments a person could expect when advancing along the path of a 20-year military career. In total, this section describes the career paths of 25 enlisted and 13 officer occupations from Military Occupations.

While the Military Occupations section presents an overview of the typical job duties in a military occupation, Military Career Paths presents a more comprehensive description of work performed at various stages of a military career.

EXPLORING CAREERS

"What will I do when I finish high school?" is a question all young people must answer sooner or later. For some, the answer is, "Get a job." For others, the answer is, "Go to college or seek further training." Although making this first decision is a major step in the lifelong process of developing a career, it will not be the last.

Some people believe that once they have decided which occupation to enter, they will follow it for the rest of their life. That is not necessarily true. The decision on which occupation to enter does not have to be permanent. People and jobs change over time. For example, people reevaluate their careers because their interests and values change, because new technology alters the skills necessary for a certain career, or because of changing economic factors.

You may now be asking yourself, "But how do I go about exploring what careers might be best for me?" There are two basic steps to career exploration:

- Learning about yourself
- Learning about careers

The following paragraphs explain how to go about career exploration using this two-step process.

LEARNING ABOUT YOURSELF

The first step is to spend some time finding out about yourself. Your interests, values, and abilities are important in making career plans. They help you think about what you might want in a career and what you are likely to enjoy. Your counselor can help you begin to clarify your interests, values, and abilities. Your counselor may also be able to give you tests that measure interests and abilities.

Another resource for learning more about yourself is *Exploring Careers: The ASVAB Workbook*. Copies of this book are available to all students who have taken the Armed Services Vocational Aptitude Battery (ASVAB). Ask your counselor for details on the ASVAB and on obtaining a copy of the Workbook. Below are some things for you to consider when learning about yourself.

Interests

What do you enjoy doing or would you like to do? Do you like to work on car engines? Perhaps you enjoy writing stories or drawing pictures. Do you prefer to work by yourself or as part of a group? Exploring your interests is helpful at the beginning of the career planning process; knowing your interests will help you to identify careers to investigate.

Your interests are also important to your career development and enjoyment of life. Working in an occupation that interests you makes it easier to work harder and advance in a career. One way to learn more about your interests is to take an "interest inventory." *Exploring Careers: The ASVAB Workbook* contains such an inventory, the *Self-Directed Search*™.
Your counselor also can suggest several inventories that will allow you to explore your interests.

Values

What do you consider most important or desirable in life? We all place a high value on having food to eat and a place to sleep. We also have values that affect what we want from our careers. Some people want careers that pay high salaries almost immediately, even if the work is not very interesting. Others are willing to accept careers with lower wages if the work is challenging and exciting. Many consider having flexible hours or opportunities to travel very important. Some people value having time to pursue nonwork-related interests such as being with their families. Understanding your values is important in planning your future. The ASVAB Workbook contains several exercises that can help you clarify your values.

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Abilities

What do you do well? Are there school subjects in which you get particularly good grades? Are you physically strong and well-coordinated? Can you communicate well with others? Have you worked to develop a skill such as playing a musical instrument? Your abilities can help you find occupations in which you may have a successful career. But just because you do not have the abilities for a certain occupation now does not mean that you cannot acquire them. Additional courses and training may help you to develop your abilities.

Also, it is possible that your interests and abilities may not always match. People are usually interested in things they do well, but this is not always the case. For example, you may be interested in becoming an electronics technician, but may not have the manual dexterity to make the precise adjustments needed to keep electronic equipment functioning. However, with additional training, you may acquire the skills needed to become an electrical engineer or a computer programmer who helps to design electronic equipment.

Each year, many high school students take the ASVAB. The ASVAB is a test that measures a person's academic and occupational abilities. ASVAB scores,

combined with information about your interests, achievements, values, and other test results, may help you select appropriate areas for career exploration.

Exploring Careers: The ASVAB Workbook will help you develop the necessary skills for learning more about yourself. It can help you identify your interests, clarify your work values, and better understand your abilities. You can use these skills again and again as you explore different career opportunities.

LEARNING ABOUT OCCUPATIONS

Next, you will need to take the information you have learned about yourself and compare it to information about different occupations. This process will allow you to identify occupations that match your interests, values, and abilities.

There are many ways to learn about the broad variety of careers open to you for exploration. To explore the military world of work, use the Military Occupations section of this book. It describes 197 different occupations offered by the Army, Navy, Air Force, Marine Corps, and Coast Guard.

The Military Career Paths section of this book can help you learn about career progression. Military Career Paths explains the typical duties and assignments a person could expect when advancing along the path of a 20-year military career.

The *Occupational Outlook Handbook* (OOH) provides occupational descriptions for about 200 civilian occupations. In addition, many schools have a computerized system that provides local, state, and national occupational information for individuals exploring the world-of-work. Your counselor, teachers, or librarians can direct you to these and other resources.

While exploring various careers, you need to be constantly asking yourself, "How well does this career match my current interests, values, and abilities?" and "Will this career lead to a lifestyle I desire?" Other questions you might want to ask yourself are:

- What do people do in this career?
- In what type of environment do people in this career work?
- What kind and how much training is needed to enter this career?
- What are the opportunities for obtaining work in this career?

Chances for a rewarding career are improved if personal and career characteristics are similar.

HOW TO USE *MILITARY CAREERS*

After learning something about yourself, explore the various career opportunities described in the Military Occupations section. Begin by reading the introduction on page 3 for information on how to use this section.

If one of the careers in the Military Occupations section is of particular interest to you, go to the Military Career Paths section to see if there is a description of its career path. Read the introduction on page 347 for information on how to use this section of the book. Even if there are no careers described of interest to you, you may want to browse through this section to learn about the various occupations and added responsibilities people encounter as they progress through a career.

MILITARY OCCUPATIONS

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Introduction to Military Occupations

Military Occupations provides an overview of the military world-of-work and was developed specifically to help students explore different military occupations. This section is divided into two parts—military enlisted occupations and military officer occupations.

Enlisted personnel carry out the fundamental operations of the military. They are people like the carpenters, tank drivers, mechanics, and air traffic controllers in the military work force. Enlisted personnel are usually high school graduates and are required to meet minimum physical and aptitude standards before enlisting. Enlistment qualifications are described on pages 14 and 15.

The enlisted occupations section provides general information and descriptions of 127 enlisted occupations. Each enlisted occupational description contains valuable information such as the primary work activities, training provided, employment opportunities, and civilian counterparts. Descriptions of the enlisted occupations can be found on pages 55 to 203. A graph is included for each occupation so you can estimate your chance of qualifying for the occupation. To use these graphs, you first must have taken the ASVAB. See your counselor or local recruiter for information on how to take the ASVAB.

Officers are the leaders of the military and usually are college graduates. Their roles are like those of corporate managers or executives. Officers develop plans, set objectives, and lead other officers and enlisted personnel in attaining their goals. Young men and women hoping to become officers must meet the minimum entrance requirements set by each military service. The qualifications required for being commissioned as an officer are described on page 213.

The officer occupations section provides general information on being an officer and descriptions of 70 officer occupations. Each officer occupation contains important information similar to that provided for enlisted occupations. For a description of how to read the officer occupations, read pages 206 and 207. Descriptions of the officer occupations can be found on pages 251 to 343.

You may also find the indexes on pages 446 through 473 helpful. If there is a civilian occupation of interest to you, the indexes will help you learn if the military has a similar occupation.

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Military Enlisted Occupations

How to Read the Enlisted Occupational Descriptions

The purpose of *Military Careers* is to introduce students, parents, and counselors to the military world-of-work. *Military Careers* can be used to explore the many employment and training opportunities available in the enlisted and officer forces of the Army, Navy, Air Force, Marine Corps, and Coast Guard.

Military Careers contains descriptions of 197 military occupations. The enlisted occupational section of *Military Careers* contains descriptions of 127 enlisted military occupations. Each enlisted description has standard sections as shown in the example on the opposite page. An explanation for each section of the description is also provided.

When reading any of the 127 enlisted descriptions, remember that it is a summary of similar job specialties across two or more of the military services. For example, the Divers description in the sample represents 18 distinct diving specialties across four services. Therefore, individual job specialties may differ somewhat from the general occupations described in this book. If you are interested in learning more about a particular service or occupation, you should contact a recruiter for details.

Occupational Title

The occupational title names the military occupation. An alphabetical listing of titles is in the index beginning on page 466 in *Military Careers*.

What They Do

"What They Do" describes the main work activities performed by workers in the occupation. Because job specialties vary from one service to another, some of the activities listed may not apply to all services.

Special Requirements

Special requirements must be met to enter certain occupations. Typing ability, fluency in a foreign language, and successful completion of certain high school courses are examples of special qualifications. This section also identifies combat occupations from which women are excluded by law.

Summary

"Summary" contains background information about the military occupation.

Physical Demands

Some military occupations place physical demands on workers. For example, strength for moderate or heavy lifting is a common physical demand noted in *Military Careers*. Other physical demands include running, climbing, swimming, clear speech, and special vision or hearing requirements.

ASVAB Qualification Graph

The ASVAB is a test offered in most high schools and postsecondary schools. If you have taken the ASVAB, you can use your Military Careers Score with these graphs.

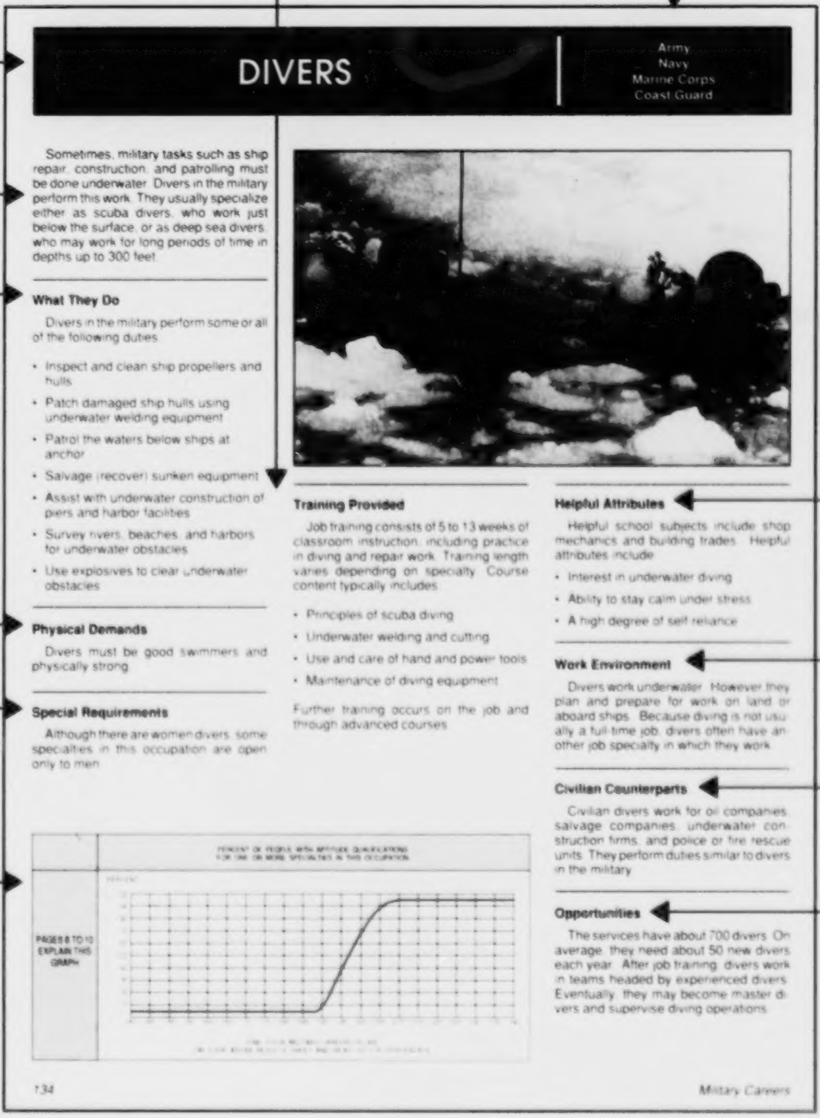
For each of the 127 enlisted occupations described in *Military Careers*, a graph is included that relates your Military Careers Score to military occupations. See page 8 for instructions on using these graphs.

Training Provided

The military provides job training to all new workers. Most job training is provided in a classroom setting. For some occupations, training is provided on the job. In "Training Provided," the length of classroom training and course content are summarized. Course content and length of training may vary for each service. When applicable, this section also names the services that offer apprenticeship programs certified by the Department of Labor.

Military Service Representation

The military services listed next to the title offer employment and training opportunities in the occupation. Not all services offer every occupation described in *Military Careers*.



DIVERS

Army
Navy
Marine Corps
Coast Guard

Sometimes, military tasks such as ship repair, construction, and patrolling must be done underwater. Divers in the military perform this work. They usually specialize either as scuba divers, who work just below the surface, or as deep sea divers, who may work for long periods of time in depths up to 300 feet.

What They Do

Divers in the military perform some or all of the following duties:

- Inspect and clean ship propellers and hulls
- Patch damaged ship hulls using underwater welding equipment
- Patrol the waters below ships at anchor
- Salvage (recover) sunken equipment
- Assist with underwater construction of piers and harbor facilities
- Survey rivers, beaches, and harbors for underwater obstacles
- Use explosives to clear underwater obstacles

Physical Demands

Divers must be good swimmers and physically strong.

Special Requirements

Although there are women divers, some specialties in this occupation are open only to men.

Training Provided

Job training consists of 5 to 13 weeks of classroom instruction, including practice in diving and repair work. Training length varies depending on specialty. Course content typically includes:

- Principles of scuba diving
- Underwater welding and cutting
- Use and care of hand and power tools
- Maintenance of diving equipment

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include shop mechanics and building trades. Helpful attributes include:

- Interest in underwater diving
- Ability to stay calm under stress
- A high degree of self reliance

Work Environment

Divers work underwater. However, they plan and prepare for work on land or aboard ships. Because diving is not usually a full-time job, divers often have another job specialty in which they work.

Civilian Counterparts

Civilian divers work for oil companies, salvage companies, underwater construction firms, and police or fire rescue units. They perform duties similar to divers in the military.

Opportunities

The services have about 700 divers. On average, they need about 50 new divers each year. After job training, divers work in teams headed by experienced divers. Eventually, they may become master divers and supervise diving operations.

PAGES 8 TO 10 EXPLAIN THIS GRAPH

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Military Careers

Helpful Attributes

"Helpful Attributes" include interests, school subjects taken, experience, and other personal characteristics that may be helpful for training and working in the military occupation. These are not requirements.

Work Environment

"Work Environment" describes the typical work settings and conditions for the occupation. Work settings may be indoors or outdoors, on land, aboard ships, or in aircraft.

Civilian Counterparts

Most military occupations are comparable to one or more civilian occupations because they require similar duties and training. "Civilian Counterparts" identifies these civilian occupations and the kinds of companies or organizations in which they are located. The *Dictionary of Occupational Titles* (DOT) Code Index, beginning on page 454, provides a complete listing of counterpart civilian occupations for each military occupation.

Opportunities

"Opportunities" contains information on the total number of enlisted personnel working in the occupation and the average annual need for new personnel. Military career advancement in the occupation is also summarized in this section.

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How to Use the ASVAB Graph

What is the ASVAB?

The ASVAB is a test that can help you with educational and career planning. ASVAB scores can be used to explore occupations that interest you. For each of the 127 enlisted occupations described in the occupations section of *Military Careers*, a graph is included that relates ASVAB scores to enlisted military occupations. The officer occupational descriptions do not include an ASVAB graph because the ASVAB is not used in the selection process for officers. Using the graphs in this book and your ASVAB results, you can estimate your chances of qualifying for entry into enlisted military occupations. If you have not taken the ASVAB and would like to, ask your school counselor for information on how to do so.

Which ASVAB Score Should I Use?

On your Student Results Sheet, you will find a section marked ASVAB Scores (see sample on opposite page). At the bottom of this section is your Military Careers Score. You can use this score to estimate your chances of qualifying for any of the enlisted occupations in this book.

What is my Military Careers Score?

Each of the enlisted military occupations described in this book requires a minimum aptitude score. The minimum score required may vary from occupation to occupation. The Military Careers Score is based on your math, verbal, mechanical, and electronic abilities, as indicated by your ASVAB Scores. By using your Military Careers Score with the graphs found in the enlisted occupational descriptions, you can estimate your chance of qualifying for any of the enlisted occupations described.

For those students in the 10th or 11th grade, it is important to remember that your Military Careers Score may improve as you get older and receive more schooling. If you took the ASVAB when you were in the 10th grade, and then again in the 12th grade, your later Military Careers Score would probably be higher. An improved Military Careers Score would allow you to qualify for a greater number of enlisted occupations. Therefore, in order to have the best possible chance of qualifying for an occupation, you should stay in school, get your high school diploma, and then take the ASVAB again.

How Do I Use My Military Careers Score?

Using your Military Careers Score to estimate your chances of qualifying for military occupations described in this book involves four steps. To help you learn these steps, a sample ASVAB graph is provided on the opposite page. Pretend the graph is from an occupational description that interests you.

STEP 1

On your Student Results Sheet, in the section marked ASVAB Scores, find your Military Careers Score. For example, the sample results sheet on the opposite page shows you have obtained a Military Careers Score of "200."

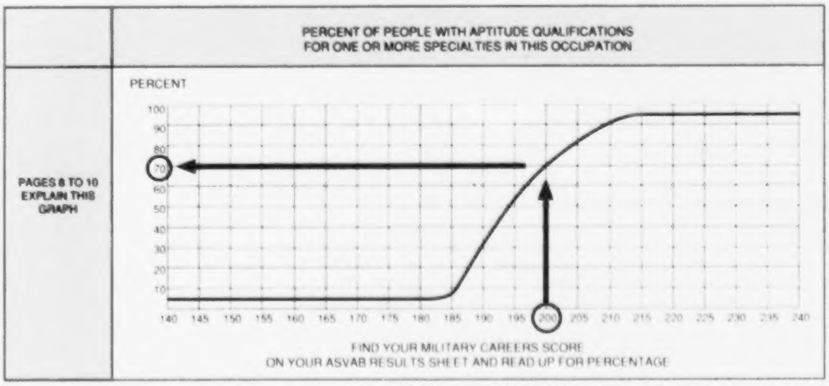
STEP 2

Find your score on the bottom line of the ASVAB graph. In this example, the arrow points to your score of "200" on the sample graph. (You will need to estimate the location of your score if it falls between the numbers shown on the bottom line of the graph.)

STEP 3

Read up in a straight line from your score until you come to the curve drawn on the graph.

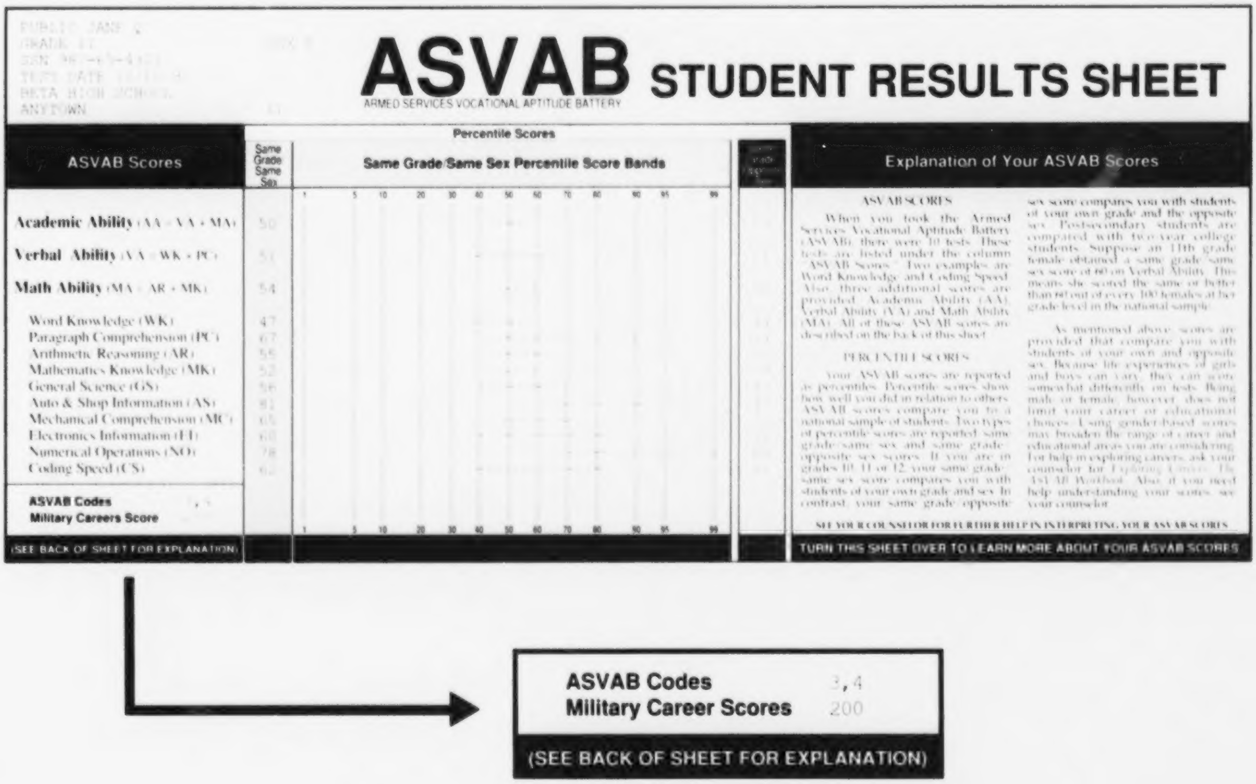
Sample *Military Career Guide* ASVAB Graph



STEP 4

Now, follow straight across to the left from the curve to the number on the side of the graph. The number indicates the percentage of people with a particular Military Careers Score who qualify for this military occupation. In the example, 70 percent of the people who obtained a Military Careers Score of "200" qualified for this occupation. This means your score of "200" gives you an estimated 70 percent chance of qualifying for one or more job specialties in the occupation. Turn to the next page for further explanation of what the percentage means.

Sample ASVAB Results Sheet



PUBLIC JANE Q
GRADE 11
BETA HIGH SCHOOL
ANYTOWN

ASVAB STUDENT RESULTS SHEET
ARMED SERVICES VOCATIONAL APTITUDE BATTERY

ASVAB Scores	Same Grade Same Sex
Academic Ability (AA = VA + MA)	50
Verbal Ability (VA = WK + PC)	51
Math Ability (MA = AR + MK)	54
Word Knowledge (WK)	47
Paragraph Comprehension (PC)	67
Arithmetic Reasoning (AR)	55
Mathematics Knowledge (MK)	52
General Science (GS)	56
Auto & Shop Information (AS)	81
Mechanical Comprehension (MC)	65
Electronics Information (EI)	68
Numerical Operations (NO)	78
Coding Speed (CS)	62
ASVAB Codes	3, 4
Military Careers Score	

(SEE BACK OF SHEET FOR EXPLANATION)

Explanation of Your ASVAB Scores

ASVAB SCORES

When you took the Armed Services Vocational Aptitude Battery (ASVAB), there were 10 tests. These tests are listed under the column "ASVAB Scores." Two examples are Word Knowledge and Coding Speed. Also, three additional scores are provided: Academic Ability (AA), Verbal Ability (VA) and Math Ability (MA). All of these ASVAB scores are described on the back of this sheet.

PERCENTILE SCORES

Your ASVAB scores are reported as percentiles. Percentile scores show how well you did in relation to others. ASVAB scores compare you to a national sample of students. Two types of percentile scores are reported: same grade/same sex and same grade/opposite sex scores. If you are in grades 10, 11 or 12, your same grade/same sex score compares you with students of your own grade and sex. In contrast, your same grade/opposite sex score compares you with students of your own grade and the opposite sex. Postsecondary students are compared with two-year college students. Suppose an 11th grade female obtained a same grade/same sex score of 60 on Verbal Ability. This means she scored the same or better than 60 out of every 100 females at her grade level in the national sample.

As mentioned above, scores are provided that compare you with students of your own and opposite sex. Because life experiences of girls and boys can vary, they can score somewhat differently on tests. Being male or female, however, does not limit your career or educational choices. Using gender-based scores may broaden the range of career and educational areas you are considering. For help in exploring careers, ask your counselor for *Exploring Careers: The ASVAB Workbook*. Also, if you need help understanding your scores, see your counselor.

SEE YOUR COUNSELOR FOR FURTHER HELP IN INTERPRETING YOUR ASVAB SCORES

TURN THIS SHEET OVER TO LEARN MORE ABOUT YOUR ASVAB SCORES

ASVAB Codes 3, 4
Military Career Scores 200

(SEE BACK OF SHEET FOR EXPLANATION)

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What Does the ASVAB Percentage Mean?

In the example, your Military Careers Score of "200" gave you an estimated 70 percent chance of qualifying for one or more job specialties in the occupation. A 70 percent chance of qualifying is similar to a weather forecaster's prediction of a 70 percent chance of rain. This prediction means that, under certain weather conditions, it rains 70 times out of 100. The ASVAB percentage means that 70 out of every 100 people who obtain a Military Careers Score of "200" have the aptitude to qualify for one or more of the occupations in the example.

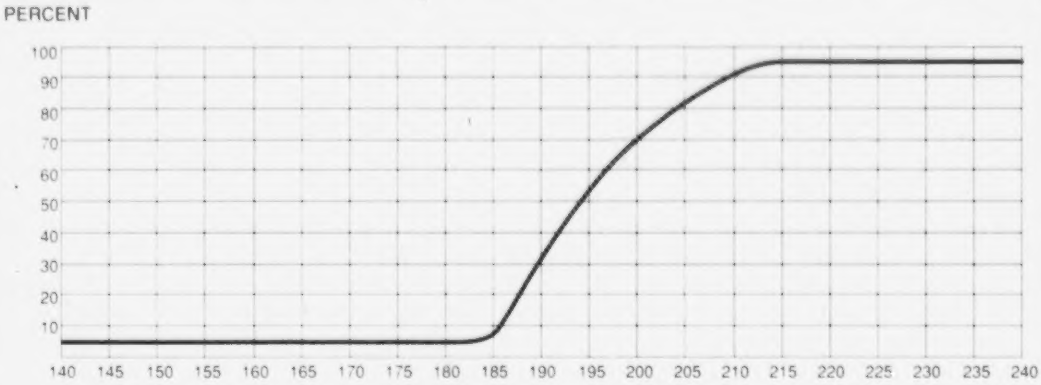
When using the ASVAB graphs, remember that ASVAB estimates are not precise measures. No test can provide a completely accurate measure of aptitudes. Your scores may change somewhat if you take the ASVAB again. For example, students who take the ASVAB during their sophomore or junior year usually find their scores improve somewhat if they retake the ASVAB during their senior year.

Also, keep in mind that aptitude is only one of several qualifications needed to enter occupations in the military. For example, specific physical requirements must be met to qualify for some occupations. The next section of this book describes some of the other requirements.

The ASVAB information in *Military Careers* is provided so that you may explore your chance of qualifying for military occupations. Specific information about whether you qualify for a particular service job specialty is available through a local service recruiter.

PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS
FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10
EXPLAIN THIS
GRAPH



FIND YOUR MILITARY CAREERS SCORE
ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

General Information on Enlisted Occupations

General Information on Enlisted Occupations

For the last 40 years, the military's personnel requirements and overall strategies have been shaped by the need to be prepared to deal with a short-notice, global war with the Soviet Union. Given the recent dramatic developments in Eastern Europe and the Soviet Union, the military services are refocusing their strategy on a peacetime mission and on readiness for regional conflicts and contingencies.

As the military plans for the 1990s, it will reduce the number of enlisted military personnel on active duty. Overall, enlisted personnel will be downsized from 1.8 million to about 1.4 million or approximately 25 percent. This reduction will occur from 1991 through 1995.

Although the active-duty military services will decline in size, they will still need substantial numbers of new recruits to fill the many entry-level jobs that will be available.

Enlisted members are the supervisors and workers who carry out and maintain the basic operations of the military. Their roles are like those of company employees or supervisors. Enlisted members serve in occupations as diverse as computer programmers, automobile mechanics, medical laboratory technicians, and personnel specialists. Enlisted members may also advance to supervisory positions. As supervisors, enlisted members are responsible for the well-being of other enlisted members and for the care of equipment and property under their control. Overall, the services have available a broad range of enlisted occupations that require personnel with various types of knowledge, skills, and abilities.

MILITARY ENLISTED OCCUPATIONS

Besides being the single largest employer in the nation, the military offers the widest choice of career opportunities. Together, the five services offer training and employment in over 2,000 enlisted job specialties. To help you explore the enlisted world-of-work, these specialties are grouped into 127 enlisted occupations in this book. The 127 occupations are organized into 12 broad groups:

- Human Services
- Media and Public Affairs
- Health Care
- Engineering, Science, and Technical
- Administrative
- Service
- Vehicle and Machinery Mechanic
- Electronic and Electrical Equipment Repair
- Construction
- Machine Operator and Precision Work
- Transportation and Material Handling
- Combat Specialty

Figure 1 shows the distribution of enlisted members across the 12 occupational groups.

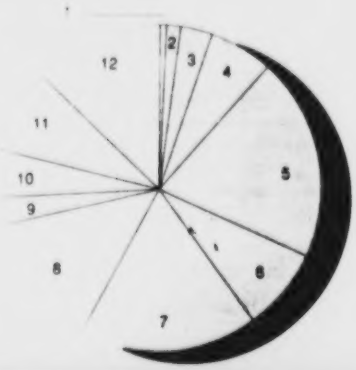


Figure 1
Distribution of Enlisted Personnel by Occupational Group

1. Human Services
2. Media and Public Affairs
3. Health Care
4. Engineering, Science, and Technical
5. Administrative
6. Service
7. Vehicle and Machinery Mechanic
8. Electronic and Electrical Equipment Repair
9. Construction
10. Machine Operator and Precision Work
11. Transportation and Material Handling
12. Combat Specialty

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Table 1 – General Enlistment Qualifications*

Age	Must be between 17 and 35 years. Consent of parent or legal guardian required if 17.
Citizenship Status	Must be either (1) U.S. citizen, or (2) an immigrant alien legally admitted to the U.S. for permanent residence and possessing immigration and naturalization documents.
Physical Condition	Must meet minimum physical standards listed below to enlist. Some military occupations have additional physical standards. Height – For males: Maximum - 6'8" / Minimum - 5'0" For females: Maximum - 6'8" / Minimum - 4'10" Weight – There are minimum and maximum weights, according to age and height, for males and females. Vision – There are minimum vision standards. Overall Health – Must be in good health and pass a medical exam. Certain diseases or conditions may exclude persons from enlistment; for example, diabetes, severe allergies, epilepsy, alcoholism, and drug addiction.
Education	High school graduation is desired by all services and is a requirement under most enlisted options.
Aptitude	Must make the minimum entry score on the Armed Services Vocational Aptitude Battery (ASVAB). Minimum entry scores vary by service and occupation.
Moral Character	Must meet standards designed to screen out persons likely to become disciplinary problems. Standards cover court convictions, juvenile delinquency, arrests, and drug use.
Marital Status and Dependents	May be either single or married; however, single persons with one or more minor dependents are not eligible for enlistment into military service.
Waivers	On a case-by-case basis, exceptions (waivers) are granted by individual services for some of the above qualification requirements.

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*Each service sets its own enlistment qualification requirements. If you are interested in a specific service's enlistment requirements, see the "Service Information on Enlisted Occupations" section beginning on page 31, or contact a military recruiter.

In order to function as a self-sufficient community, the military must employ individuals with many different skills and abilities. The services need auto, ship, and aircraft mechanics to keep their many forms of transportation moving; food service specialists to provide meals for thousands of soldiers; and computer programmers to maintain information and communication systems. Therefore, the military has a wide spectrum of occupations.

Over 75 percent of all military occupations have counterparts in the civilian world-of-work. For example, dental hygienist, air traffic controller, computer programmer, aircraft mechanic, and electronic technician occupations exist in both the military and civilian work forces.

The services offer training and an opportunity to progress in each occupation. No matter which occupation newly enlisted personnel enter, they will find a well-defined career path leading to higher pay and increased responsibility.

ENLISTMENT

Enlisted personnel are usually high school graduates and must meet minimum standards such as physical and aptitude requirements before enlisting. The general qualifications required for enlistment are shown in Table 1. If you are interested in a specific service's enlistment requirements or programs, see the "Service Information on Enlisted Occupations" section beginning on page 31.

Service Obligation

Joining the military involves entering into a legal contract called an enlistment agreement. The service agrees to provide a job, pay, benefits, and occupational training. In return, the enlisted member agrees to serve for a certain period of time, which is called the service obligation. The standard service obligation is eight years, which is divided between active military duty, and reserve duty. Depending on the enlistment program selected, enlisted members spend two to six years on active duty, with the balance of the eight-year obligation period spent in reserve status.

Enlistment Programs

Enlistment programs vary by service. The services adjust the programs they offer to meet changing recruiting needs. Major enlistment options include cash bonuses for enlisting in certain occupations and guaranteed choice of job training and assignments. Currently, all services also offer a Delayed Entry Program (DEP), an option that is used by many high school students who wish to enlist now, but wait a short while before entering into active duty. By enlisting under the DEP option, an applicant delays entry into active duty for up to one year. High school students often enlist under the DEP during their senior year and enter a service after graduation. Other qualified applicants choose the DEP because the job training they desire is not currently available, but will be within the next year.

Enlistment Contracts

The enlistment contract specifies the enlistment program selected by the applicant. It contains the enlistment date, term of enlistment, and other options, such as a training program guarantee or a cash bonus. If, for any reason, the service cannot meet its part of the agreement (for example, to provide a specific type of job training), then the applicant is no longer bound by the contract. If the applicant accepts another enlistment program, a new contract is written.

High School Graduates

The military encourages young people to stay in high school and graduate. Research has shown that high school graduates are more likely to adjust to military life and complete an initial tour of duty. Therefore, the services accept very few non-high school graduates.

ENLISTING IN THE MILITARY

Enlisting in the military involves a four-step process.

Step 1: Talking with a Recruiter

If you are interested in applying for one of the military services, you must talk with a recruiter from that service. Recruiters can provide detailed information about the employment and training opportunities in their service, as well as answer specific questions about service life, enlistment options, and other topics. They can also provide details about their service's enlistment qualification requirements.

If you decide to apply for entry into the service, and the recruiter identifies no problems (such as a severe health problem), the recruiter will examine your educational credentials. The recruiter will then schedule you for enlistment processing.

Step 2: Qualifying for Enlistment

Full enlistment processing occurs at one of the more than 60 Military Entrance Processing Stations (MEPS) located around the country. At the MEPS, applicants take the ASVAB if they have not already done so and receive medical examinations to determine if they are qualified to enter the service. The ASVAB may also be administered at Mobile Examining Team (MET) sites.

ASVAB results are used to determine if an applicant qualifies for entry into a service and if the applicant has the specific aptitude level required to enter job specialty training programs. If you have taken the ASVAB at your school, you can use your scores to determine if you qualify for entry into the military services, provided the scores are not more than two years old. Applicants with current ASVAB scores are not required to take the ASVAB a second time.

Step 3: Meeting with a Service Classifier

A service classifier is a military career information specialist who helps applicants select military occupations. For example, if you are applying for entry, the classifier would inform you of service job training openings that match your aptitudes and interests. Specifically, the classifier would enter your ASVAB scores into a computerized reservation system. Based on your scores, the system would show the career fields and training programs for which you qualify and when job training would be available.

After discussing job training options with the classifier, you would select an occupation and schedule an enlistment date. Enlistment dates may be scheduled up to one year in the future to coincide with job training openings. This option is called the Delayed Entry Program (DEP).

Following selection of a military training program, you would sign an enlistment contract and take the oath of enlistment. If you chose the DEP option, you would return home until your enlistment date.

Step 4: Enlisting in the Service

After completing enlistment processing, applicants who select the immediate enlistment option receive their travel papers and proceed to a military base for basic training. Applicants who select the DEP option return to the MEPS on their scheduled enlistment date. At that time, applicants officially become "enlistees" (also known as "recruits") and proceed to a military base.

In the uncommon event that your guaranteed training program, through no fault of your own, is not available on the reserved date, you have three options:

- Make another reservation for the same training and return at a later date to enter the service
- Select another occupation and job training option
- Decide not to join the service and be free from any obligation.

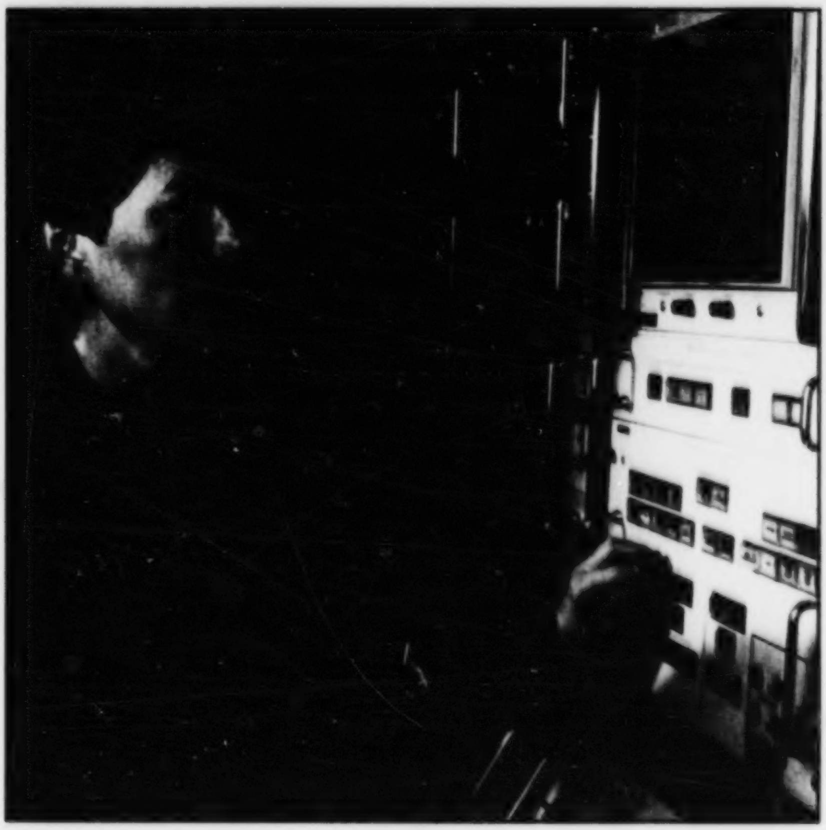
MILITARY TRAINING

The military operates one of the largest training systems in the world. The five services sponsor nearly 300 technical training schools offering more than 10,000 separate courses of instruction.

Education and training provided by the services offer service members valuable opportunities for career development. The services spend billions of dollars each year training service members for jobs ranging from air traffic controller to medical service technician. The main purpose of training is to prepare individuals to perform jobs in the service. Training also helps individuals meet personal goals and prepares them to assume greater responsibility in the service work force.

The military generally provides four kinds of training for its personnel:

- Recruit training
- Job training
- Advanced training
- Leadership training.



Recruit Training

Recruit training, popularly called basic training, is a rigorous orientation to the military. Depending on the service, recruit training lasts from six to ten weeks and provides a transition from civilian to military life. The services train recruits at selected military bases across the country. Where an enlistee trains depends on the service and the job training to be received. Through basic training, recruits gain the pride, knowledge, discipline, and physical conditioning necessary to serve as members of the Army, Navy, Air Force, Marine Corps, and Coast Guard.

Upon reporting for basic training, recruits are divided into training groups of 40 to 80 people. They then meet their drill instructor, receive uniforms and equipment, and move into assigned quarters.

During basic training, recruits receive instruction in health, first aid, and military skills. They also improve their fitness and stamina by participating in rigorous daily exercises and conditioning. To measure their conditioning progress, recruits are tested on sit-ups, push-ups, running, and body weight.

Recruits follow a demanding schedule throughout basic training: every day is carefully structured with time for classes, meals, physical conditioning, and field instruction. Some free time (including time to attend religious services) is available to recruits during basic training. After completing basic training, recruits normally proceed to job training.

Job Training

Through job training, also called technical or skill training, recruits learn the skills they will need to perform their job specialties. The military provides its personnel with high-quality training because lives and mission success depend on how well people perform their duties. Military training produces highly qualified workers, and for this reason many civilian employers consider military training excellent preparation for civilian occupations.

The type of job specialty determines the length of training. Most training lasts from 10 to 20 weeks, although some nuclear specialities require over one year of training.

Military training occurs both in the classroom and on the job. Classroom training emphasizes hands-on activities and practical experience, as well as textbook learning. For example, recruits who will be working with electronic equipment practice operating and repairing the equipment, in addition to studying the principles of electronics.

At their first assignments, enlisted members continue to learn on the job. Experienced enlisted members and supervisors help service men and women further develop their skills. In addition, the military offers refresher courses and advanced training to help military personnel maintain and increase their skills. As personnel advance in rank, they continue their training with leadership and management courses.

Three services, the Army, Navy, and Marine Corps, offer apprenticeship programs for some job specialties. These programs consist of classroom and on-the-job training that meet U.S. Department of Labor apprenticeship standards. After completing an apprenticeship program, personnel receive a Department of Labor apprenticeship certificate. To military commanders and civilian employers, these certificates demonstrate that the worker has acquired specific skills and qualifications.

For each of the 127 enlisted occupations described in the Military Occupations section of this book, a summary of the typical training content and length is provided.

Advanced Training

Hundreds of advanced training courses have been developed by the services to improve the technical skills of the enlisted work force. These courses offer instruction in skills not covered in initial training. An automobile mechanic, for example, may take advanced instruction in troubleshooting (identifying engine problems) or preventive maintenance techniques. Advanced training also includes courses covering new or additional job-related equipment. An auto mechanic may go to school to learn how to repair a new type of vehicle, or a radiological technician may take instruction in the use of ultrasound equipment. Advanced training is especially important in high technology areas where military technicians are constantly being exposed to newer and more sophisticated equipment. Other advanced courses provide instruction in supervising and managing the daily operations of military units, such as repair shops or medical facilities.

Some advanced training involves classroom training, but the services also provide enlisted members with a wide choice of self-study correspondence courses. Some of these are general courses and address most duties of a job. Other courses are designed to cover highly complex tasks or job-related skills. Self-study courses are particularly important to individual career advancement. Completing a self-study course can provide a service member with the job skills and knowledge to perform more advanced job duties. Self-study courses also include material that prepares enlisted personnel to take the competitive examinations required to advance through the noncommissioned officer (NCO) ranks.

Leadership Training

Each service has schools and courses to help supervisors be more effective in managing the day-to-day operations of their units. These classes are designed primarily for noncommissioned officers. Courses include instruction in leadership skills, service regulations, and management techniques needed to train and lead other service members.

CAREER DEVELOPMENT, GUIDANCE AND COUNSELING

Almost every military base has an education center. At these centers, counselors are available with information about education and training (military and civilian) and requirements for career advancement. They can also provide information about retraining for other military occupations.

Counselors coordinate the services' education programs and help service men and women set educational goals. They can explain the many opportunities available and help service members enroll in programs or courses. The counselors help enlisted personnel tailor their educational programs to meet their career goals.

Continuing Education

The services recognize the value of education, both military and civilian. Military training helps enlisted personnel perform their job duties and develop leadership and supervisory skills. Continuing civilian education, regardless of the subject, also helps an enlisted person to become a more well-rounded individual, better prepared to deal with the challenges of service life. The services offer many programs to help and encourage enlisted men and women to continue their civilian educations. Enlisted personnel may enroll in courses to earn college degrees, improve work skills, or simply for personal enjoyment. Each service's training department offers self-study courses on many different topics in which any enlisted person can enroll. If you are interested in a specific service's continuing education programs, see the "Service Information on Enlisted Occupations" section beginning on page 31.

Defense Activity for Nontraditional Education Support (DANTES)

DANTES is an organization within the Department of Defense designed to support education in all of the services. It helps develop and administer education programs. In addition to supporting individual service programs, DANTES also offers many different programs for active-duty service members. The College Level Examination Program (CLEP) allows service members to obtain college credits through examination without attending courses. The Independent Study Program allows enlisted personnel to take high school through graduate-level self-study courses offered by accredited colleges and universities.

Service Members Opportunity Colleges (SOC)

The Service Members Opportunity Colleges are a consortium of colleges and universities that help enlisted personnel satisfy the requirements for college degrees. Because enlisted personnel are frequently reassigned, they can find it difficult to complete their coursework for a degree at one college or university. In this program, more than 400 participating colleges and universities accept credits earned at other schools and award credit for some military training courses. Through the SOC, enlisted personnel can more easily complete the requirements for a college degree.

Other College Programs

The services offer tuition assistance programs that pay from 75 to 100 percent of the fees for off-duty study in most courses at accredited schools, depending upon the availability of funds. Enlisted personnel can use these courses to pursue bachelor's or advanced degrees. The services also have agreements with many colleges and universities that allow the schools to hold classes on the base. Similar programs also offer courses at overseas locations and aboard ships.

U.S. COAST GUARD

ENLISTED CAREER ADVANCEMENT

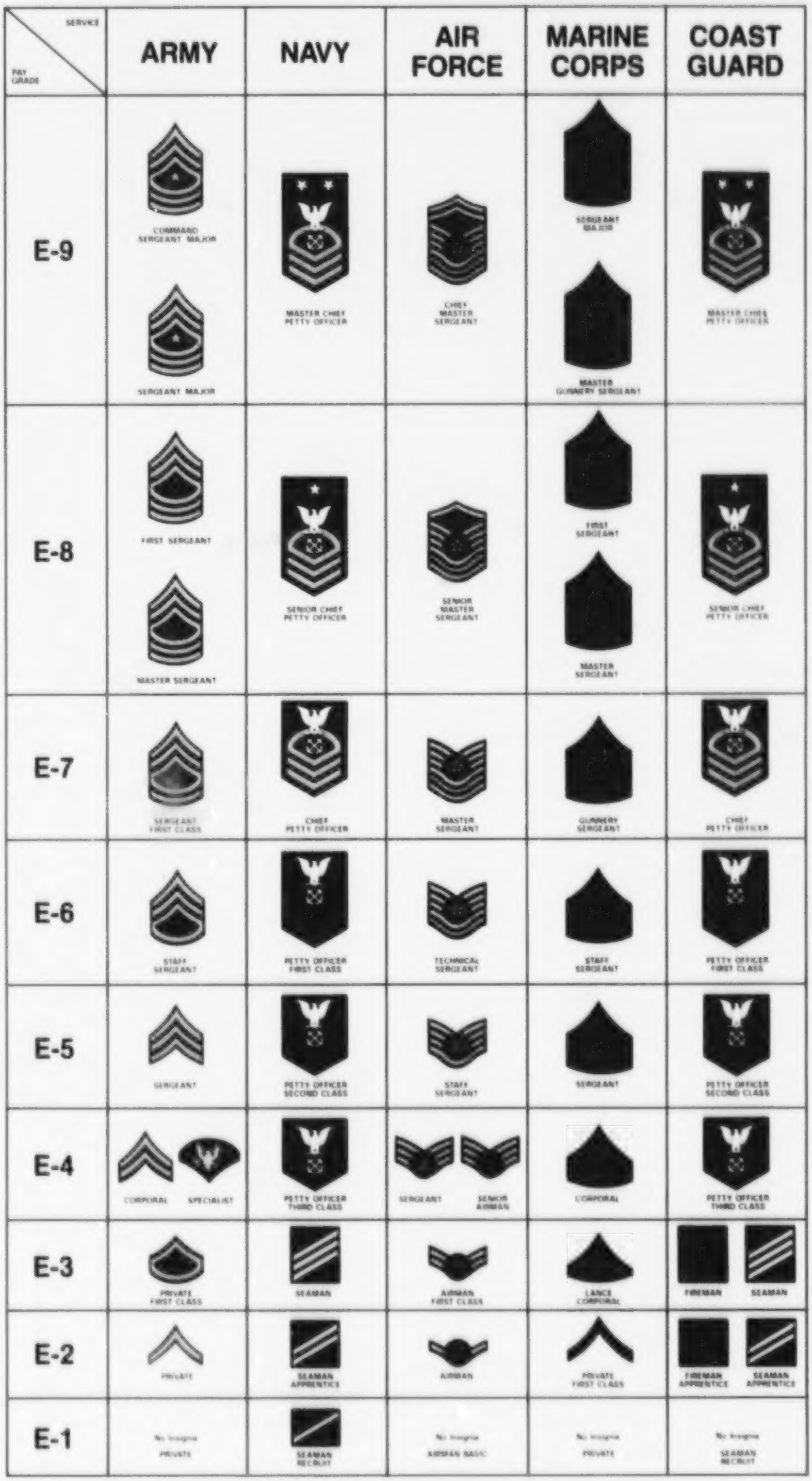
A military career is more than just a job. The military offers the opportunity to advance in exciting careers. Motivated men and women advance by improving their job skills and taking on greater responsibility. Advancement means recognition for a job well done, a promotion to more responsible duties, and increased military rank and pay grade. Pay grade and length of service determine a service member's pay. Figure 2 shows the insignias for the ranks of each service. It also depicts the relationship between rank and pay grade.

Enlisted Promotion

Men and women in the lower pay grades (E-1 to E-3) usually advance to the next grade based on their length of service and time in their present pay grade. They must also receive their commanding officer's approval and be satisfactorily progressing in their training and job performance. Only individuals who show superior performance may be promoted to E-4.

Enlisted personnel can qualify for further promotions based on their length of service, time in present pay grade, job performance, leadership ability, and awards or commendations. Each service sets minimum standards for the length of service and time in current pay grade that must be met before a person can compete for promotion to the next higher pay grade.

Figure 2
Enlisted Insignia of the United States Armed Forces



PAY GRADE \ SERVICE	ARMY	NAVY	AIR FORCE	MARINE CORPS	COAST GUARD
E-9	COMMAND SERGEANT MAJOR SERGEANT MAJOR	MASTER CHIEF PETTY OFFICER	CHIEF MASTER SERGEANT	SERGEANT MAJOR MASTER GUNNERY SERGEANT	MASTER CHIEF PETTY OFFICER
E-8	FIRST SERGEANT MASTER SERGEANT	SENIOR CHIEF PETTY OFFICER	SENIOR MASTER SERGEANT	FIRST SERGEANT MASTER SERGEANT	SENIOR CHIEF PETTY OFFICER
E-7	SERGEANT FIRST CLASS	CHIEF PETTY OFFICER	MASTER SERGEANT	GUNNERY SERGEANT	CHIEF PETTY OFFICER
E-6	STAFF SERGEANT	PETTY OFFICER FIRST CLASS	TECHNICAL SERGEANT	STAFF SERGEANT	PETTY OFFICER FIRST CLASS
E-5	SERGEANT	PETTY OFFICER SECOND CLASS	STAFF SERGEANT	SERGEANT	PETTY OFFICER SECOND CLASS
E-4	CORPORAL SPECIALIST	PETTY OFFICER THIRD CLASS	SERGEANT SENIOR AIRMAN	CORPORAL	PETTY OFFICER THIRD CLASS
E-3	PRIVATE FIRST CLASS	SEAMAN	AIRMAN FIRST CLASS	LANCE CORPORAL	FIREMAN SEAMAN
E-2	PRIVATE	SEAMAN APPRENTICE	AIRMAN	PRIVATE FIRST CLASS	FIREMAN APPRENTICE SEAMAN APPRENTICE
E-1	No Insignia PRIVATE	SEAMAN RECRUIT	No Insignia AIRMAN BASIC	No Insignia PRIVATE	No Insignia SEAMAN RECRUIT

Figure 3 shows the average time an enlisted member has been in the military (time-in-service) when he or she is promoted to each pay grade. For example, it takes an average of one year to reach pay grade E-3 and nine years to reach E-6. The time-in-service and advancement information shown is developed from data provided by each of the services.

All enlisted personnel are led, supervised, and evaluated by senior enlisted personnel and officers. Factors that qualify an enlisted person for promotion include:

- Performance of job duties
- Ability to work with others
- Educational achievement through technical, on-the-job, or civilian instruction
- Knowledge of service regulations, discipline, and ability to carry out orders
- Appearance and behavior.

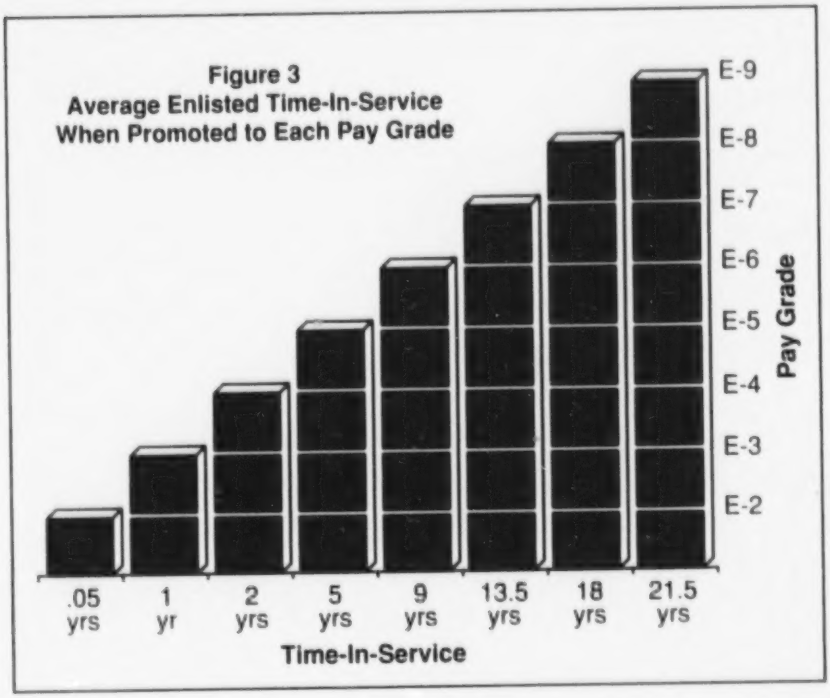


Figure 3
Average Enlisted Time-In-Service When Promoted to Each Pay Grade

Good performance reports are essential to continue along a career path. Although a good performance report does not automatically qualify an individual for promotion, a less than satisfactory rating severely limits chances for promotion. By selecting from among qualified individuals for promotion to each rank, the services try to ensure that the best qualified personnel are promoted. Because the number of enlisted positions is limited by Congress, the competition for promotion at the senior levels is intense. Changes in the number of personnel in a particular specialty, or in the armed services as a whole, can also affect promotion.

Enlisted Commissioning Programs

Officers and enlisted personnel advance along separate career paths. However, each service has programs that enable selected enlisted personnel to become commissioned officers. The entrance standards for these programs are high, and the competition strong.

Typically, there are two ways for enlisted personnel to earn commissions: through direct appointment to officer training and through service programs that send enlisted personnel to college full time to obtain a degree. Direct appointment programs usually require an outstanding performance record and a college degree. Individuals selected for these programs go to officer training schools operated by their service. Enlisted personnel selected to complete their college degree attend college through an ROTC program or one of the service academies. After completing officer training, these individuals are awarded commissions as officers in their services.

DUTY ASSIGNMENT

The five services have similar systems for assigning personnel to jobs. Each system is designed to satisfy the staffing needs of the particular service. For example, if the service needs a machinist at a remote location, a service member trained as a machinist is assigned there. However, at the same time, the services also attempt to meet the desires of the individual service member and provide opportunities for career development. The duty assignment process determines where enlisted personnel work, how often they move, and the opportunities open to them.

Assignment Decisions

The services use noncommissioned officers who are familiar with a particular occupation to manage assignments for people in that job. Although they cannot always meet each person's needs or desires, these noncommissioned officers try to make duty assignments that will enhance each service member's career.

Each service tries to give enlisted members job assignments in different types of organizations. Gaining a range of experience is more important to people at supervisory levels, because with each assignment, service members learn more about their jobs and gain confidence in their abilities to react effectively to unexpected events or to assume greater responsibility.

Possible Location

All services require their members to travel. Enlisted personnel are stationed in each of the 50 states and in countries all over the world. They are routinely reassigned after two-, three-, or four-year tours of duty. To many people, this is one of the attractive parts of service life and, in fact, many men and women join for the opportunity to travel, live in foreign countries, and see different parts of the United States.

Nearly three-quarters of all service personnel are assigned to duty in the United States. Each service also has personnel stationed overseas; many personnel are located in Europe, in countries such as Great Britain, Italy, and Germany. Enlisted personnel are also assigned to the Pacific and Far East, in countries such as Japan, South Korea, and Australia. During their careers, many service members will serve at least one overseas assignment. Several of the services have programs that allow enlisted personnel returning from overseas to select the location in the United States where they will be stationed.

Length of Tours

The time that an enlisted person spends at a particular duty assignment is called a "tour." The length of a tour varies by service and geographic location. Typically, a tour lasts from three to four years, although there are many exceptions.

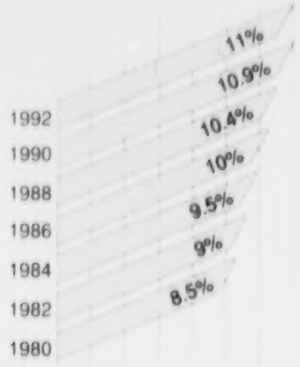
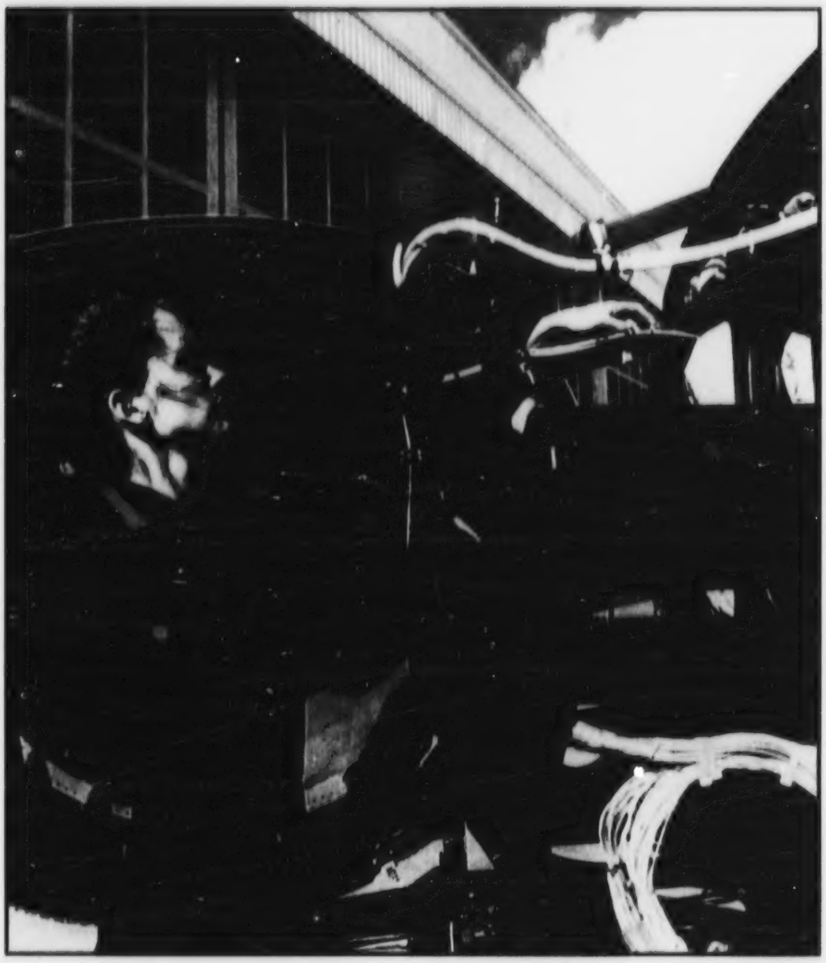


Figure 4
Enlisted Women
1980-1992



WOMEN IN THE MILITARY

Military women make important contributions to national defense. As shown in Figure 4, military women have increased in numbers to 11 percent of active duty personnel. The total number of women in the enlisted forces was 177,500 in 1992.

Not only has the percentage of women risen, but also women's opportunities in the military have expanded. Women are currently eligible to enter almost 90 percent of all military job specialties. Examples of the many occupations women occupy include helicopter mechanic, missile maintenance technician, computer programmer, environmental health specialist, and heavy equipment operator.

Historically, women have not been assigned to duty that involves a high probability of exposure to direct combat. This policy is currently being reviewed.

RESERVE FORCES

Seven different forces make up the Reserves—the Army, Navy, Air Force, Marine Corps, and Coast Guard Reserves and the Army and Air National Guard. Currently, over 1.6 million Americans serve as Reservists. Each year, the military needs about 228,000 new Reservists.

The Reserves are important to our overall national defense. In a national emergency, Reservists can be called up immediately to serve on active duty, because they are highly trained by the services and drill regularly.

During peacetime, the Reserves perform many functions to support active-duty forces in our country's defense, such as reconnaissance, rescue missions, air defense for the continental U.S., installation and repair of communications equipment, and transport of troops, material, and medical support.

Enlistment

To enlist in the Reserves, applicants must meet physical, aptitude, citizenship, educational, and moral requirements similar to those that active-duty applicants must meet. They must also be between 17 and 35 years of age. Parental consent is required for 17-year-olds. Specific age standards vary by service.

Reservists normally enlist for eight years. They serve an initial period on active duty while completing basic training and receiving job training. After the training period, which usually lasts several months, Reservists return to civilian life. For the remainder of their service obligation, they attend training sessions and perform work in their job specialty one or two days per month (usually in the evening or on weekends) with their local unit. Once a year (usually during the summer), Reservists participate in an active-duty training session of 10 to 14 days.

Pay and Promotions

Reservists are paid at the same rate as active-duty members for the time they spend working or training. Pay grade and length of service determine their rate of pay.

The Reserves have promotion systems similar to, but separate from, the regular services. Reservists compete only with other Reservists for promotion; advancement is based on performance and length of service.

Training

The military generally offers the same basic and initial job training to Reservists as it does to active-duty members. Reservists may attend the same schools and complete similar training programs. Besides basic training and initial job training, Reservists may enroll in advanced training courses by correspondence or may attend regular service training classes.

PAY AND BENEFITS

Military personnel in all five services are paid according to the same pay scale and receive the same basic benefits. Military pay and benefits are set by Congress, which normally grants a cost-of-living pay increase once each year. In addition to pay, the military provides many of life's necessities, such as food, clothing, and housing, or pays monthly allowances for them. The following sections describe military pay, allowances, and benefits in more detail.

Enlisted Pay Grades

Enlisted members can progress through nine enlisted pay grades during their career. Pay grade and length of service determine a service member's pay. Figure 2, on page 23, shows the relationship between pay grade and rank in each service and also illustrates the insignia for the ranks.

GI Bill Benefits

Individuals entering active duty after June 30, 1985, are automatically enrolled in the Montgomery GI Bill Program unless they choose not to participate. Those enrolled in the program have their basic pay reduced by $100 per month for their first 12 months of service. Upon completion of three years of continuous active duty, individuals are eligible for $300 per month for 36 months, for a maximum of $10,800 in basic benefits for full-time schooling (individuals who complete a two-year obligation will receive $250 per month for 36 months).

Basic Pay

The major part of an enlisted member's paycheck is basic pay. Pay grade and total years of service determine an enlisted member's basic pay. Table 2 contains information on annual basic pay as of 1992. Cost-of-living increases generally occur once a year.

Incentives and Special Pay

The military offers incentives and special pay (in addition to basic pay) for certain types of duty. For example, incentives are paid for submarine and flight duty. Other types of hazardous duty with monthly incentives include parachute jumping, flight deck duty, and explosives demolition. In addition, the military gives special pay for sea duty, diving duty, special assignments, duty in certain foreign places, and duty in areas subject to hostile fire. Depending on the service, bonuses are also paid for entering certain occupations.

Table 2 – 1992 Basic Pay for Enlisted Members (Annual Figures)

	Years of Services								
Pay Grade	Under 2 yrs	2	3	4	6	8	10	···	26
E-9	*	*	*	*	*	*	$28,271	···	$36,392
E-8	*	*	*	*	*	$23,706	24,383	···	32,501
E-7	$16,594	$17,867	$18,529	$19,177	$19,829	20,462	21,118	···	29,243
E-6	14,242	15,520	16,168	16,855	17,485	18,115	18,781	···	21,348
E-5	12,496	13,601	14,263	14,882	15,862	16,506	17,161	···	18,115
E-4	11,653	12,308	13,032	14,040	14,594	14,594	*	···	*
E-3	10,980	11,585	12,046	12,521	*	*	*	···	*
E-2	10,566	*	*	*	*	*	*	···	*
E-1	9,428	*	*	*	*	*	*	···	*
Less than 4 months	8,719[1]	*	*	*	*	*	*	···	*

[1] E-1 Basic Pay for the first four months is about $727 per month ($8,719 on an annual basis).

* Military Personnel with this many years of service will probably not be in this pay grade. (Pay scale between 10 and 26 years not shown.)

Allowances

Most enlisted members, especially in the first year of service, live in military housing and eat in military dining facilities free of charge. Those living off base receive quarters (housing) and subsistence (food) allowances in addition to their basic pay. In 1992, the monthly housing allowance ranged from $169 to $551, depending on pay grade and number of dependents. The food allowance ranged from $178 to $288 per month, depending on living circumstances. Because allowances are not taxed as income, they provide a significant tax savings in addition to their cash value.

When added up, housing and food allowances, together with their tax savings, are substantial additions to basic pay. Table 3 contains information on the total value of basic pay, allowances, and tax savings, called Regular Military Compensation. The table represents the amount of pay a civilian worker would need to earn to realize the same "take home" pay as a service member. These figures provide a more realistic basis of comparison between military and civilian wages than do the figures in Table 2.

Table 3 – 1992 Regular Military Compensation (Annual Figures)

	Years of Services								
Pay Grade	Under 2 yrs	2	3	4	6	8	10	···	26
E-9	*	*	*	*	*	*	*	···	$49,601
E-8	*	*	*	*	*	*	$24.383	···	44.780
E-7	*	*	*	*	$31,233	$31.911	32,576	···	40,785
E-6	$24,704	$26,082	$26,708	$27.437	28,090	28.727	29,401	···	*
E-5	21,924	23,029	23.713	24.364	25.372	26.027	26,694	···	*
E-4	19,774	20,461	21,215	22,210	22.756	*	*	···	*
E-3	18,535	19,152	19.622	20.107	*	*	*	···	*
E-2	17,244	*	*	*	*	*	*	···	*
E-1	15,634	*	*	*	*	*	*	···	*
Less than 4 months	14.693[1]	*	*	*	*	*	*	···	*

E-1 Regular Military Compensation reflects basic pay, allowances, and the value of the tax advantage for allowances.

[1] E-1 Regular Military Compensation for the first four months is roughly $1,224 per month ($14,693 on an annual basis).

* Military Personnel with this many years of service will probably not be in this pay grade. (Pay scale between 10 and 26 years not shown.)

Employment Benefits

Military personnel receive substantial benefits in addition to their pay and allowances. While they are in the service, enlisted members' benefits include health care, vacation, legal assistance, recreational programs, educational assistance, and commissary/exchange (military store) privileges. Families of service members also receive some of these benefits. Table 4 contains a summary of these employment benefits.

Retirement Benefits

The military offers one of the best retirement programs in the country. After 20 years of active duty, personnel may retire and receive a monthly payment equal to 40 percent of their average basic pay for their last five years of active duty. Persons who retire with more than 20 years of service receive higher pay. Other retirement benefits include medical care and commissary/exchange privileges.

Veterans' Benefits

Veterans of military service are entitled to certain veterans' benefits set by Congress and provided by the Veterans Administration. In most cases, these include guarantees for home loans, hospitalization, survivor benefits, educational benefits, disability benefits, and assistance in finding civilian employment.

Table 4 – Summary of Enlisted Employment Benefits

Vacation	Leave time of 30 days per year.
Medical, Dental, and Eye Care	Full medical, hospitalization, dental, and eye care services for enlistees and most health care costs for family members.
Continuing Education	Voluntary educational programs for undergraduate and graduate degrees or for single courses, including tuition assistance for programs at colleges and universities.
Recreational Programs	Programs include athletics, entertainment, and hobbies: Softball, basketball, football, swimming, tennis, golf, weight training, and other sports Parties, dances, and entertainment Club facilities, snack bars, game rooms, movie theaters, and lounges Active hobby and craft clubs, book and music libraries.
Exchange and Commissary Privileges	Food, goods, and services are available at military stores, generally at lower costs than regular retail stores.
Legal Assistance	Many free legal services are available to assist with personal matters.

Service Information on Enlisted Occupations

Army

OVERVIEW

Today's "Army of Excellence" is a modern and powerful military force redesigning to a goal of 69,000 officers, 11,500 warrant officers, and 450,000 enlisted soldiers. Army men and women work in many types of jobs, ranging from general administration to the operation and maintenance of the Army's many thousands of weapons, vehicles, aircraft, and highly technical electronic systems.

Soldiers, working as a team, perform the Army's mission of protecting the security of the United States and its vital resources. The Army stands constantly ready to defend American interests and the interests of our allies through land-based operations anywhere in the world.

The Army needs approximately 80,000 to 90,000 new enlistees each year. Those who enlist into the Army will find hundreds of challenging career opportunities that can offer a lifetime of security and excitement to them and their families.

ENLISTMENT

Enlistment in the Army may be for two, three, four, five, or six years. Applicants must be from 17 to 35 years old, American citizens or registered aliens, and in good health and physical condition. To determine what careers they are best suited for, all applicants must take the Armed Services Vocational Aptitude Battery (ASVAB). The ASVAB is offered at most high schools and at military enlistment processing sites.

In most cases, qualified applicants can be guaranteed their choice of training or duty assignment. There are often combinations of guarantees that are particularly attractive to those who are qualified. For those who wish to be guaranteed a specific school, a particular area of assignment, or both, the Army offers the Delayed Entry Program (DEP). An applicant for the DEP can reserve a school or an assignment choice as much as one year in advance of entry into active duty. Other enlistment programs include the Army Civilian Acquired Skills Program, which gives recognition to those skills acquired through civilian training or experience. This program allows enlisted members with previously acquired training to be promoted more quickly than they ordinarily would be. In some cases, the Army also offers enlistment bonuses.

Enlistment programs and options vary from time to time. Local Army recruiters always have the latest information and are ready to answer inquiries without obligation.

TRAINING

Initial Army training is provided in two phases: basic training and Advanced Individual Training (job training).

Basic Training

Basic training is a rigorous eight-week orientation for men and women entering the Army. Basic training transforms new enlistees from civilians into soldiers. During basic training, new soldiers gain the discipline, spirit, pride, knowledge, and physical conditioning necessary to perform Army duties.

Army basic training is given in several locations throughout the country, including training centers in New Jersey, South Carolina, Georgia, Kentucky, Alabama, Oklahoma, and Missouri.

Upon reporting for basic training, new soldiers are assigned to a training company and are issued uniforms and equipment. They are introduced to their training leaders, otherwise known as drill sergeants. Drill sergeants are experienced noncommissioned officers who direct soldiers' training to ensure that they are successful.

Army basic training stresses teamwork. Soldiers are trained in groups known as squads or platoons. These groups range from nine to approximately 80 soldiers; they are small enough that each soldier can be recognized for his or her special abilities. Such groups tend to become closely knit teams and develop group pride and camaraderie during the eight weeks of rigorous training they experience together.

Basic training is conducted on a demanding schedule, but each soldier progresses at the rate he or she can handle best. Soldiers attend a variety of classes and field instruction that include military training, weapons familiarization, physical conditioning, and military drills. All training emphasizes team work and therefore includes classes in human relations. These classes help trainees from different backgrounds learn to work closely together. Only limited personal time is available during basic training, but there is plenty of time for receiving and answering mail, for personal care, and for attending religious services.

Job Training (Advanced Individual Training)

After basic training, Army soldiers go directly to Advanced Individual Training in the occupational field that they have chosen and qualified for, where they learn a specific Army job. Advanced Individual Training schools are located at many Army bases throughout the country.

The Army offers skills training in a wide range of career fields that include programs maintenance, administration, electronics, health care, construction, and combat specialty occupations, to name a few.

Advanced Individual Training students generally attend traditional classes very similar to those in a high school or college. These classes are supplemented with demonstrations by highly qualified instructors and by practical exercises that use "hands-on" training, Army equipment, or Army procedures in a way that prepares students for their jobs. Many soldiers also receive on-the-job training, learning job skills by working at a job with other soldiers under the guidance of qualified instructors.

Some Advanced Individual Training courses are registered with the U.S. Department of Labor as certified apprenticeship training programs. Generally, this training qualifies participants for both federal and state apprenticeship programs and helps secure future civilian employment in their chosen trade.

ADVANCEMENT

Every job in the Army has a career path leading to increased pay and responsibility with well-defined promotion criteria. After six months of service, new soldiers advance to Private (E-2). The next step in the promotion ladder is Private First Class (E-3), which occurs after the 12th month. Promotion to Corporal or Specialist (E-4) occurs after established time-in-grade and time-in-service requirements are met. These times vary, but every soldier can ordinarily expect to become a corporal within his or her first three years of service. Starting with grade E-5, promotions to Sergeant through Sergeant Major are accomplished on a competitive basis. At each grade, there are minimum periods of time in service and time in grade that must be met before a soldier can be considered for promotion. In some cases, there also are educational requirements that must be met for promotion.

The Army offers a number of ways to advance beyond enlisted status as either a warrant officer or commissioned officer. These programs usually are reserved for only the best qualified soldiers. Warrant officers perform duties similar to commissioned Army officers. Many warrant officers are directly appointed from the enlisted grades as vacancies occur. These opportunities usually exist in the technical fields, especially those involving maintenance of equipment. Other opportunities are available in Army administration, intelligence, and law enforcement. Unique among the Armed Forces is the Army's Warrant Officer Aviator Program. Qualified personnel may enlist for Warrant Officer Candidate School and, upon completion, receive flight training and appointment as Army warrant officer aviators.

Enlisted soldiers may also compete for a limited number of selections to attend Officer Candidate School (OCS) or the United States Military Academy. Upon graduating from OCS or the academy, soldiers receive officer commissions. For soldiers with college degrees, there are opportunities for direct commissioning.

EDUCATION PROGRAMS

For enlisted personnel, the Army has a well-defined system for progressive service school training. Soldiers are often able to volunteer for this schooling or, in some cases, they are selected on a competitive basis.

As a soldier progresses in his or her career, advanced technical training opportunities are offered. These courses include, but are not limited to, advanced noncommissioned officer courses at the staff sergeant grade level and the Sergeants Major Academy at the E-8 and E-9 levels.

Civilian education is stressed as a means to improve both the soldier's work performance and preparedness for life in a technical and competitive society. The Army Continuing Education System provides counseling, academic services, and vocational-technical services at little or no cost. In a few cases, the Army sends its soldiers to college, but generally they are encouraged to pursue college training during off-duty time.

Army personnel are also eligible to participate in educational assistance programs with the government, such as the Montgomery GI Bill, which can provide up to $10,800 for future educational needs. Additionally, the Army College Fund may add additional monetary incentives to qualified soldiers' accounts.

FOR FURTHER INFORMATION

Students who wish to learn more about specific military jobs and careers are encouraged to use this manual to its fullest. In addition, many career information systems found in high schools and libraries have information about Army careers. The most up-to-date information about Army programs or careers is always available from an Army recruiter. For the Army recruiter nearest you, check the Yellow Pages or call 1-800-USA-ARMY for details. There is no obligation.

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Navy

OVERVIEW

The Navy plays an important role in helping to maintain the freedom of the seas. It defends the right of our country and its allies to travel and trade freely on the world's oceans and helps protect our country during times of international conflict. Navy sea and air power make it possible for our country to use the oceans when and where our national interests require it.

The Navy is a large and diverse organization. It is made up of about 550,000 officers and enlisted people. Navy personnel operate and repair more than 500 ships and over 6,000 aircraft; they serve in such diverse fields as radio operators, dental specialists, seamen, computer programmers, photographers, ship electricians, and boiler technicians and work in many other exciting careers. Navy people serve on ships at sea, on submarines under the sea, in aviation positions on land and sea, and at shore bases around the world.

The Navy recruits about 100,000 officers and enlisted people each year to fill openings in Navy career fields.

ENLISTMENT

To qualify for enlistment in Navy programs, men and women must be between the ages of 17 and 34. Parental consent is required for all 17-year-olds. In the nuclear field, the maximum enlistment age is 23, due to extensive training requirements. Since most Navy programs require enlistees to be high school graduates, the Navy prefers young people to graduate first before entering the Navy.

Enlistees must be citizens of the United States or immigrant aliens with immigration and naturalization papers. A physical examination and the Armed Services Vocational Aptitude Battery (ASVAB) test must be completed.

Initial enlistment in the Navy usually is for four years. However, two-, three-, five-, or six-year enlistments are also available for men and women, depending on the programs they select.

After going through the enlistment process at a Military Entrance Processing Station, Navy people usually are placed in the Delayed Enlistment Program (DEP). Recruits in the DEP are guaranteed training assignments. The DEP allows enlistees to finish high school, take care of personal business, or just relax before reporting for duty.

There is extra pay in the Navy for sea duty, submarine duty, demolition duty, diving duty, work as a crew member of an aviation team, or jobs that require special training. Because the nuclear field is such a critical and unique area of the Navy, quicker promotions are earned and bonuses are available when the training in this field is completed and also when sailors with nuclear training reenlist.

TRAINING

The Navy is known for the excellent training it provides. The Navy provides both recruit training and job training.

Recruit Training

The first assignment for every Navy enlistee is recruit training. It is a tough eight-week period of transition from civilian to Navy life. It provides the discipline, knowledge, and physical conditioning necessary to continue serving in the Navy.

Navy recruit training centers are located in Orlando, Florida; Great Lakes, Illinois; and San Diego, California. Women recruits train only at Orlando. After reporting, recruits are placed into training companies, issued uniforms and equipment, and assigned living quarters.

The recruit's day starts at 0530 (5:30 a.m.). Taps (lights out) is at 2130 (9:30 p.m.). During weekdays, the daily schedule is based on 11 periods of physical fitness and classroom instruction, each lasting 40 minutes.

Physical fitness training includes push-ups, sit-ups, sit-reach, distance running, water survival, and swimming instruction. Recruits are tested for physical fitness at the beginning and end of recruit training. The test requirements differ slightly for men and women.

Recruits are given classroom and field instruction covering more than 30 subjects, including aircraft and ship familiarization, basic deck seamanship, career incentives, decision-making, time management, military drill, Navy mission and organization, military customs and courtesies, and the chain of command.

Job Training

After recruit training, most Navy people go directly to the technical school (called class A school) they signed up for at the Military Entrance Processing Station.

The Navy has more than 60 job fields from which enlistees may choose. They are grouped in occupational categories similar to the 127 occupations described in *Military Careers.*

Navy class A schools are located on military bases throughout the United States, including Great Lakes, Illinois; San Diego, California; Newport, Rhode Island; Millington, Tennessee; and Pensacola, Florida. They range in length from a few weeks to many months, depending on the complexity of the subject.

Those who complete recruit training and are still undecided about what career path they want to take in the Navy can begin an on-the-job apprenticeship training program. One such program for men is the Subfarer Program, which trains men to serve aboard submarines. The Divefarer Program trains personnel in diving specialties, and the Aircrew Program trains enlistees in inflight maintenance and tactical crew duties in naval aircraft.

When apprentices finish on-the-job training, they should have an idea of what type of job (rating) they want to pursue during the rest of their Navy service. They may then apply to class A school for training in that rating. Advanced training in most job fields is available later in a Navy person's career.

The Office of Education Credit of the American Council on Education regularly reviews and evaluates Navy training and experience. It has recommended that colleges and universities award credits for nearly all Navy courses.

ADVANCEMENT

Like other branches of the service, the Navy has nine enlisted pay grades, from E-1 to E-9. A new enlistee entering the Navy is an E-1 (Seaman Recruit). After about six months in the Navy, the E-1 normally is eligible for advancement to E-2 (Seaman Apprentice).

Navy promotions are based on: 1) job performance, 2) competitive examination grades, 3) recommendations of supervisors, 4) length of service, and 5) time in present level of work. It is impossible to predict exactly when promotions will occur; however, every job in the Navy has a defined career path leading to supervisory positions.

People with highly developed skills in certain critical occupations may enter the Navy at advanced pay grades. Some people qualify for one of the specialized technical training programs in the electronics or nuclear fields, where advancement is often rapid.

Enlisted petty officer ratings (E-4 through E-9) are not to be confused with Navy commissioned officer rankings. Most Navy enlisted personnel are not college graduates, while most Navy commissioned officers have college degrees. However, the Navy does offer several programs that allow enlisted personnel to advance to officer status.

Two Navy programs, Limited Duty Officer (LDO) and Warrant Officer (WO), permit career enlisted Navy people to advance to commissioned officer status without a college education. Enlisted Navy people interested in officer commissions through these two programs should start planning for them early in their careers. These commissions are limited to successful career petty officers; the competition is keen and the standards are high.

The Enlisted Commissioning Program enables an eligible enlisted man or woman with previous college credits and between 4 and 11 years of active service to earn a bachelor's degree in 24 months or less while assigned to Naval Reserve Officers' Training Corps (NROTC) college. Because these students may not actually have to participate in the NROTC program at college, they earn their commissions as Navy officers after graduating from Officer Candidate School (OCS).

EDUCATION PROGRAMS

The Navy believes that the more education people receive, the better equipped they are to perform their jobs and fulfill personal goals. A program called Navy Campus provides opportunities for enlisted members to take continuing education classes throughout their Navy careers. Through Navy Campus, enlisted members can pursue all levels of education and training, from high school equivalency to vocational certificate to college degree, wherever they are stationed. Navy Campus offers on-duty and off-duty study to provide a complete package of educational benefits to Navy people. They can enroll in any combination of Navy Campus programs and keep adding credits toward a civilian college degree or vocational certificate of their choice.

The Navy offers enlisted members two officer preparatory programs to improve their academic status so they may compete for a commissioning program such as the NROTC or the United States Naval Academy in Annapolis, Maryland. These preparatory programs are the Broadened Opportunity for Officer Selection and Training (BOOST) and the Naval Academy Preparatory School (NAPS).

The United States Naval Academy offers a fully subsidized four-year college education—plus a monthly salary. About 1,300 people are selected for the Naval Academy each year from nominations by Senators, Representatives, the President and Vice President of the United States, and the Secretary of the Navy.

Candidates must be U.S. citizens, aged 17 to 22, and single with no children. Enlisted Navy men and women applying to the academy must have served at least one year of active duty by the date of entrance. Graduates receive a bachelor of science degree and a commission.

FOR FURTHER INFORMATION

The occupational information provided in *Military Careers* can be useful in exploring career opportunities in the Navy. Many career information systems found in high schools and libraries have similar information about military careers. However, to learn more detailed information about the latest training and enlistment programs, contact your local Navy recruiter. There is no obligation. The Navy toll free number for recruiting information is 1-800-327-NAVY.

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Air Force

OVERVIEW

The mission of the Air Force is to preserve the United States as a free nation through the use of the world's most technologically advanced aerospace forces. The Air Force flies and maintains aircraft, such as long-range bombers, supersonic fighters, Airborne Warning and Control System (AWACS) aircraft, and many others, whenever and wherever necessary, to protect the interests of America and American allies. Almost 500,000 highly trained officers and airmen make up today's Air Force. Some pilot aircraft—everything from helicopters to the Space Shuttle. Many others do the jobs that support the Air Force's flying mission; they may work as firefighters, aircraft mechanics, security police, or air traffic controllers or in many other Air Force career fields. The Air Force currently recruits about 30,000 to 40,000 men and women each year to fill openings in hundreds of challenging Air Force careers.

ENLISTMENT

Applicants for enlistment in the Air Force must be in good health, possess good moral character, and make the minimum scores on the Armed Services Vocational Aptitude Battery (ASVAB) required for Air Force enlistment. They must also be at least 17 years of age.

Prior to taking the oath of enlistment, qualified applicants may be guaranteed either to receive training in a specific skill or to be assigned within a selected aptitude area. The Guaranteed Training Enlistment Program guarantees training and initial assignment in a specific job skill. The Aptitude Area Program guarantees classification into one of four aptitude areas (mechanical, administrative, general, or electronic); specific skills within these aptitude areas are selected during basic training.

After choosing one of these programs, applicants may also qualify for the Delayed Enlistment Program (DEP). DEP enlistees become members of the Air Force Inactive Reserve with a delayed date for active-duty enlistment. They do not participate in any military activities or earn pay or benefits while in the DEP. The individual agrees to enter active duty on a certain date, and the Air Force agrees to accept him or her (if still qualified) and provide training and initial assignment in the aptitude area or job specified.

TRAINING

The Air Force provides two kinds of training to all enlistees: basic training and job training.

Basic Training

All Air Force Basic Military Training (BMT) is conducted at Lackland Air Force Base (AFB) in San Antonio, Texas. BMT teaches enlistees how to adjust to military life, both physically and mentally, and promotes pride in being a member of the Air

Force. It lasts six weeks and consists of academic instruction, confidence courses, physical conditioning, and marksmanship training. Trainees who enlist with an aptitude-area guarantee receive orientation and individual counseling to help choose a job specialty compatible with Air Force needs and with their aptitudes, education, civilian experience, and desires. After graduation from BMT, recruits receive job training in their chosen specialty.

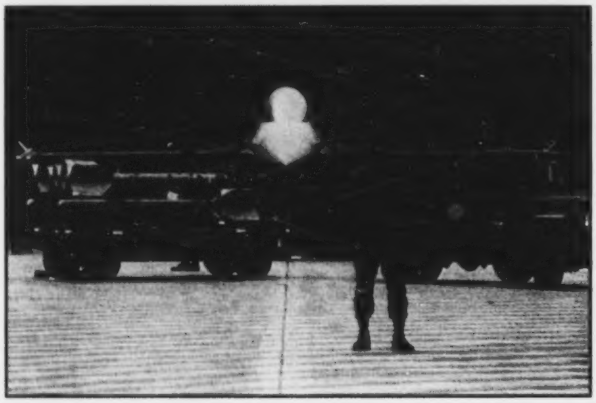
Job Training

Most BMT graduates go directly to one of the Air Training Command's Technical Training Centers for formal, in-residence training. In-residence job training is conducted at Keesler AFB, Biloxi, Mississippi; Lackland AFB, San Antonio, Texas; Sheppard AFB, Wichita Falls, Texas; Goodfellow AFB, San Angelo, Texas; and several other locations nationwide. In formal classes and practice sessions, airmen learn the basic skills needed for first assignment in their specialty. Some airmen proceed directly to their initial duty station and receive instruction in their skill through on-the-job training (OJT).

Air Force training does not end with graduation from basic training or a technical training school. Upon arriving at their first permanent duty station, airmen begin OJT. OJT is a two-part program consisting of self-study and supervised job performance. Airmen enroll in skill-related correspondence courses to gain broad knowledge of their Air Force job, and they study technical orders and directives to learn specific tasks they must perform. They also work daily with their trainers and supervisors who observe them during hands-on task performance. Through OJT, they develop the job skills needed to progress from apprentice airmen to skilled noncommissioned officers. Airmen are also offered advanced training and supplemental formal courses throughout their careers to increase their skills in using specific equipment or techniques.

MANAGEMENT TRAINING

In addition to becoming skilled in their specialties, Air Force airmen and noncommissioned officers (NCOs) are also leaders and supervisors. Schools in the professional military education (PME) system teach airmen and NCOs to be more effective in the operation of the Air Force. PME is a progressive system consisting of leadership schools for airmen, NCO academies for intermediate NCOs, and the Senior NCO Academy for selected Master Sergeants, Senior Master Sergeants, and Chief Master Sergeants. Through PME, airmen and NCOs develop management abilities that are valuable in any chosen career, military or civilian.



ADVANCEMENT

Airman Basic (pay grade E-1) is the initial enlisted grade. However, persons who have completed a Civil Air Patrol program or Junior Reserve Officers' Training Corps (JROTC) for any service or have attained certain levels of college credit may qualify for enlistment in a higher grade.

Every job in the Air Force has a defined career path leading to supervisory positions. Airman Basic enlistees are normally promoted to Airman (E-2) upon completion of six months of service and to Airman First Class (E-3) after 16 months of service. Promotion to Senior Airman (E-4) usually occurs at the three-year point of service. However, some airmen qualify for accelerated promotion. Local Air Force recruiters have all the details on qualifications for accelerated promotions and advanced enlistment grades.

Promotions to the higher enlisted grades of Staff Sergeant (E-5), Technical Sergeant (E-6), Master Sergeant (E-7), and Senior and Chief Master Sergeant (E-8 and E-9) are competitive. Eligible airmen compete with others worldwide in the same grade and skill, based on test scores, performance ratings, decorations, and time in service and grade. All airmen receive a promotion score that shows how they stand in relation to others in their specialty and where improvement may be needed. Additionally, E-8 and E-9 candidates are reviewed by a selection board.

Chief Master Sergeants occupy the top enlisted grade, and they have great responsibility and prestige in the Air Force. They have the management ability to head several enlisted specialties related to their own skill or they may be the top enlisted expert in a highly technical field.

Normally, enlisted airmen and commissioned officers advance along separate career fields. However, the Air Force offers two programs through which airmen can receive commissions: the Air Force ROTC Scholarship Commissioning Program and the Airman Education and Commissioning Program. The Air Force ROTC Scholarship Commissioning Program allows airmen to complete their college degrees and earn officer commissions through two-, three-, and four-year Air Force ROTC scholarships. If selected for the program, the individual is transferred from active duty into the Air Force Reserve, then attends college (at the same time enrolling in the college's Air Force ROTC program) for completion of degree requirements. This highly competitive program pays tuition, fees, and a monthly allowance.

In addition to the AFROTC Scholarship Commissioning Program, airmen can also apply for a commission as an Air Force officer under the Airman Education and Commissioning Program (AECP). Enlisted personnel who possess bachelor's degrees or who can complete degree requirements under this program in areas of critical need may be accepted into the Officer Training Group. They are commissioned upon graduation.

EDUCATION PROGRAMS

The Air Force has many special education programs to help men and women pursue their educational goals while serving in the Air Force. These programs are in addition to educational benefits set up by the federal government for members of all services. All Air Force bases have education service centers, where trained counselors help airmen decide on a program or combination of programs and help them enroll. Some of these programs are:

Community College of the Air Force

The Community College of the Air Force (CCAF) offers education programs directly related to Air Force specialties; graduates are awarded the associate in applied science degree. The college works with Air Force training schools, regional accrediting agencies, and hundreds of cooperating civilian colleges and universities. Since the technical nature of most Air Force courses places them on a level with college study, airmen earn fully recognized college credits for most of what they learn in job training and on-the-job training. They can combine those credits with attendance at off-duty courses from civilian colleges to earn a two-year accredited associate degree in applied sciences from CCAF. The college offers more than 80 fields of study, ranging from police science to environmental services technology. Registration is free, and CCAF establishes a special study program for each student. Professional, industrial, and governmental organizations that issue licenses and certifications and set standards for civilian work recognize Air Force training and education through CCAF.

The College Level Examination Program

This rapidly expanding program allows airmen to receive credit for selected college courses by examination. The program is free, and education services centers maintain a current list of college tests available.

The Extension Course Institute

The Extension Course Institute (ECI) is the Air Force's correspondence school. It offers, free of charge, nearly 400 courses to some 250,000 students who register for ECI each year. These courses include everything from fundamentals of solid state devices to apprentice carpentry. Air Force personnel may voluntarily enroll in courses such as auto mechanics, plumbing, carpentry, or electrical wiring simply for background knowledge.

Tuition Assistance

The Air Force will pay 75 percent of the tuition costs of most college courses. Many of these courses are offered on Air Force bases, with local college professors coming to the base.

FOR FURTHER INFORMATION

Local Air Force recruiters have the latest information on enlistment programs and career opportunities; contact them if you have any questions. High school guidance counselors can also give you advice on Air Force ROTC programs and the USAF Academy.

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Marine Corps

OVERVIEW

The Marine Corps has become one of the most elite fighting forces in the world. Since its creation on November 10, 1775, the U.S. Marine Corps has allowed America to project power far from its shores. Against the Barbary pirates off the coast of Tripoli, Libya, the Marines, from 1801 through 1805, launched a series of punitive raids in retaliation for attacks on U.S. ships. The attacks ceased. Almost 200 years later, when Saddam Hussein sent his forces into Kuwait in August 1990, the Marines rushed to the region, arriving just seven days after President Bush ordered U.S. forces to respond. The Marines brought the first heavy tanks and artillery to prevent Hussein's advance into Saudi Arabia.

The Marines are a part of the Department of the Navy and operate in close cooperation with U.S. naval forces at sea. The Marine Corps' mission is unique among the services. Marines serve on U.S. Navy ships, protect naval bases, guard U.S. embassies, and provide a quick, ever-ready strike force to protect U.S. interest anywhere in the world. All Marines can move on short notice to match up with equipment stored on floating bases on the world's oceans. In the post-Cold War world, this remains an essential capability for the U.S. With their inherent flexibility and global reach, the Marines serve as America's force of choice to met the main threats of the 1990s.

To perform the many duties of the Marine Corps, approximately 188,000 officers and enlisted Marines fly planes and helicopters; operate radar equipment; drive armored vehicles; gather intelligence; survey and map territory; maintain and repair radios, computers, jeeps, trucks, tanks, and aircraft; and perform hundreds of other challenging jobs. Each year, the Marine Corps recruits approximately 37,000 enlisted men and women to fill openings in its numerous career fields. The Marine Corps training programs offer practical, challenging, and progressive skill development. The Marine Corps stresses professional education for all ranks and emphasizes the development of mental strength as well as traditional physical prowess. In this way, the Marine Corps provides the Nation with a modern well-armed force that is both "tough" and "smart."

ENLISTMENT

Marine Corps enlistment terms are for three, four, five, or six years, depending on the type of enlistment program. Young men and women enlisting in the Marine Corps must meet exacting physical, mental, and moral standards. Applicants must be between the ages of 17 and 29, American citizens or registered aliens, and in good health to ensure that they can meet the rigorous physical training demands. The Armed Services Vocational Aptitude Battery (ASVAB), described in this guide, is used by the Marine Corps to assess each person's vocational aptitudes and academic abilities. Some applicants for enlistment may have taken the ASVAB while still in high school. For those applicants who have not previously taken the ASVAB, a Marine recruiter can arrange for them to do so.

Applicants for enlistment can be guaranteed training and duty assignment with a wide variety of options, depending upon the degree of education and the qualifications they possess. Women are eligible to enlist in all occupational fields, with the exception of combat arms—infantry, artillery, and tank and amphibian tractor crew members.

In addition to regular enlistment, the Marine Corps offers special enlistment programs.

Delayed Entry Program

Students who wish to complete the Marine Corps enlistment process before graduating from high school or a community college may enlist in the Marine Corps Delayed Entry Program (DEP). Enlistment in the DEP allows applicants to postpone their initial active-duty training for up to a full year. Enlisting in the DEP has two principal benefits: the student can finish high school or community college, and the highly desirable enlistment programs that are available in limited numbers, such as all computer specialties and many aviation specialties, can be reserved early.

Musician Enlistment Option Program

The Musician Enlistment Option Program gives graduates with musical talent an opportunity to serve in Marine Corps bands or the Marine Corps Drum and Bugle Corps. The program's incentives include formal school training, accelerated promotions, and duty station choices.

Enlistment Options Program

The Enlistment Options Program guarantees well-qualified applicants, before they enlist, assignment to one of several military occupational specialties (MOS) in an MOS cluster. The MOS clusters contain every job available in the Marine Corps, ranging from combat arms to motor transport to high technology avionics, electronics, and computer science. Some enlistment options feature cash bonuses as well as formal training programs.

College and Quality Enlistment Program

The College Enlistment Program is for highly qualified young men and women for enlistment and assignment primarily to technical occupational fields. The program provides incentives to all high school graduates with post-high school degrees or vocational/community college certificates who want to enlist for four, five, or six years.

The Quality Enlistment Program is for highly qualified young men and women for enlistment and assignment primarily to technical occupational fields. The program provides incentives, including choice of geographic assignment, to all qualified high school graduates or seniors who enlist for six years.

TRAINING

Marine Corps training occurs in two sections: recruit training and job training.

Recruit Training

Upon completing the enlistment process, all applicants enter Marine Corps recruit training. Young men undergo recruit training either at Parris Island, South Carolina, or in San Diego, California. All young women attend recruit training at Parris Island. Recruit training is rigorous, demanding, and challenging. The overall goal of recruit training is to instill in the recruits the military skills, knowledge, discipline, pride, and self-confidence necessary to perform as United States Marines.

In the first several days at the recruit depot, a recruit is assigned to a platoon, receives a basic issue of uniforms and equipment, is given an additional physical, and takes further assignment classification tests. Each platoon is led by a team of three Marine drill instructors. A typical training day for recruits begins with reveille at 0500 (5:00 a.m.), continues with drill, physical training, and several classes in weapons and conduct, and ends with taps at 2100 (9:00 p.m.).

Job Training

Upon graduation from recruit training, each Marine takes a short vacation, then reports to the School of Infantry for combat skills training. Upon graduation from the School of Infantry, Marines then report either to a new command for formal school training or to the on-the-job training to which he or she has been assigned. The Marine Corps sends students to over 200 basic formal schools and to over 300 advanced formal schools. The length of formal school varies from four weeks to over a year, depending on the level of technical expertise and knowledge required to become proficient in certain job skills. For example, different MOSs within the electrical and electronic repair occupational field require from 10 to 50 weeks to complete; different MOSs in the vehicle and machinery mechanic occupational field require from six to 18 weeks to complete.

Marines assigned to an MOS within the combat specialty occupational field conduct most of their training in the countryside. Marines receiving training in highly technical MOSs receive most of their training in a classroom. The main thrust of Marine Corps training is toward "hands-on" training and practical application of newly acquired skills. As soon as possible after classroom instruction is completed, students are placed in an actual work environment to obtain practical experience and to develop confidence. After completing entry-level MOS training, most Marines are assigned to operational units of the Fleet Marine Forces to apply their skills. Marines assigned to the more technical MOSs may require more advanced training prior to their first operational duty assignment.

Job performance requirements in a number of MOSs are comparable to requirements needed for journeyman certification in civilian occupations. A Marine assigned to these MOSs may apply for status as a registered apprentice.

ADVANCEMENT

Advancement is directly linked to an individual's performance in an MOS and development as a Marine. Each Marine is evaluated based on job performance, experience, and ability to apply newly learned skills. While promotion criteria rely heavily upon individual job performance, Marines are also in competition with others of the same rank in the same MOS. Promotion becomes increasingly competitive as Marines advance in rank. The normal time-in-grade requirements for promotion are as follows: Private to Private First Class, six months; Private First Class to Lance Corporal, eight months; Lance Corporal to Corporal, eight months; and Corporal to Sergeant, 24 months. Promotions above Sergeant to the staff noncommissioned officer (SNCO) ranks are determined by promotion boards.

The Meritorious Promotion System is used to recognize Marines who demonstrate outstanding job performance and professional competence. Marines recommended for meritorious promotion are carefully screened for accelerated advancement. Qualified enlisted Marines can compete for and be accepted into the officer corps through several different programs. Competition is keen, and only the best qualified Marines are accepted.

The Enlisted Commissioning Program

This program provides the opportunity for enlisted Marines with two years of college to apply for assignment to the Officer Candidates School and subsequent appointment as unrestricted commissioned officers.

Enlisted Commissioning Education Program

The Marine Corps Enlisted Commissioning Education Program provides to selected enlisted Marines (who have had no college experience) the opportunity to earn baccalaureate degrees by attending a college or university as full-time students. Marines in this program who obtain their baccalaureate degrees and subsequently complete officer candidate training are commissioned as Second Lieutenants.

The Warrant Officer Program

Warrant officers are technical specialists who are assigned to duties only in their area of expertise. All other officers are said to be "unrestricted" and are assigned to a wide variety of assignments during their career. The Warrant Officer Program provides for the selection and appointment to permanent warrant officer those qualified applicants who are in the grade of Sergeant or above at the time of application.

EDUCATION PROGRAMS

All Marines on active duty are encouraged to continue their education by taking advantage of service schools and Marine Corps funded off-duty courses at local civilian colleges. Three educational assistance programs are available to enlisted Marines.

The Marine Corps has developed an extensive professional military education program to provide Marine leaders with the skill, knowledge, understanding, and confidence that will better enable Marines to make sound military decisions.

Tuition Assistance Program

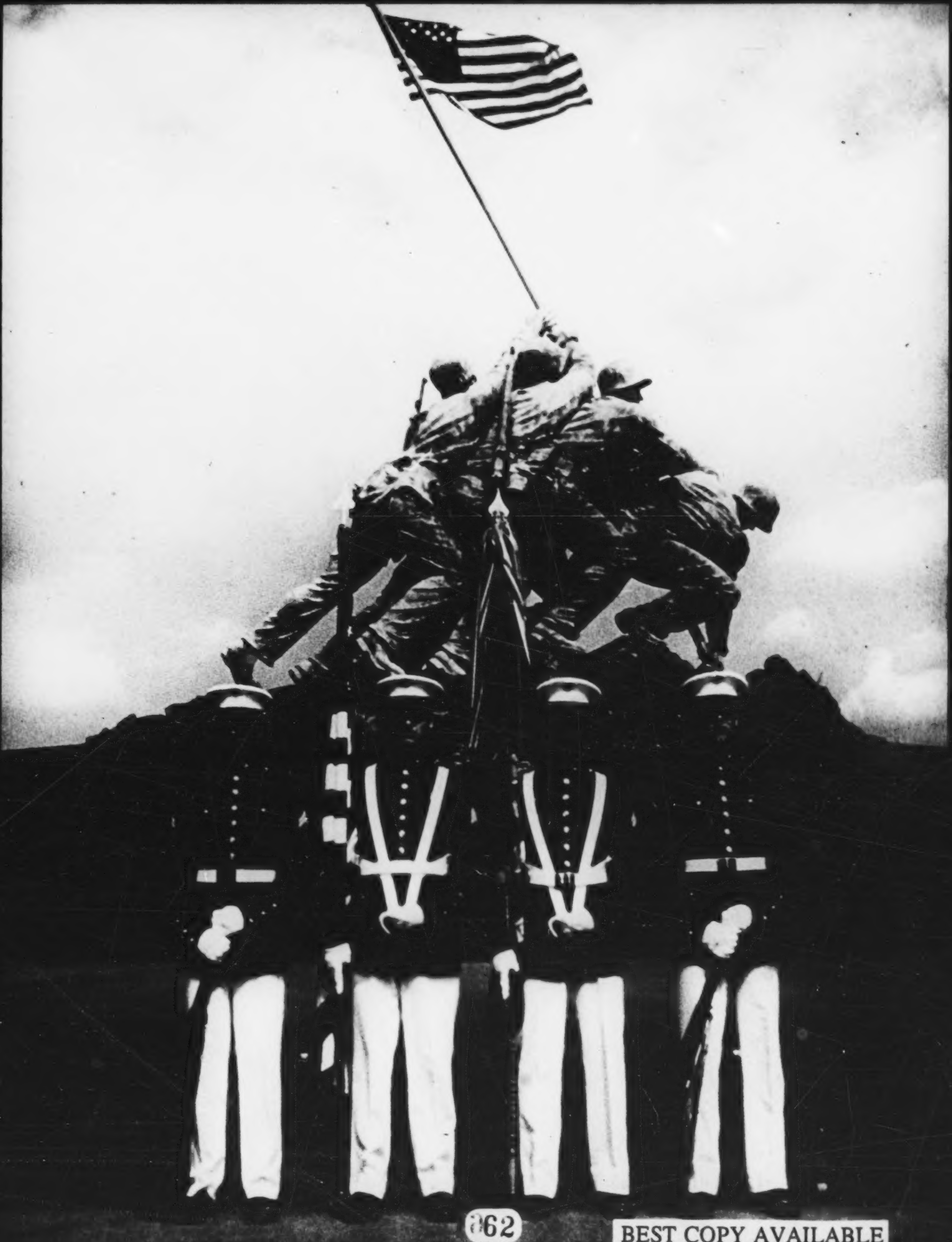
The Marine Corps Tuition Assistance Program provides Marines with financial assistance to pursue educational programs at civilian secondary and postsecondary institutions during off-duty time. Tuition assistance may only be used to fund courses at a higher academic level than the degree or diploma currently held by the Marine.

Servicemembers' Opportunity Colleges

The Servicemembers' Opportunity Colleges (SOC) is a consortium of colleges and universities that have agreed to help military personnel gain access to higher education by minimizing residency requirements, recognizing nontraditional education attainment, such as the College Level Examination Program (CLEP) tests, easing the transfer of college credit of similarly accredited institutions, and granting credit for formal military training.

FOR FURTHER INFORMATION

The above information provides the general scope of enlistment policies, recruit training, follow-on training, and educational opportunities found in the Marine Corps today. Young men and women who are interested in joining the Marine Corps should contact a Marine recruiter.



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Coast Guard

OVERVIEW

The Coast Guard constantly performs its mission of protecting America's coastlines and inland waterways by enforcing customs and fishing laws, combating drug smuggling, conducting search and rescue missions, maintaining lighthouses, and promoting boating safety. The Coast Guard is part of the Department of Transportation; in time of war it may be placed in the Department of Defense under the command of the Navy. A vital part of the Armed Services, the Coast Guard has participated in every major American military campaign. With a work force of about 6,000 officers and over 32,000 enlisted personnel, Coast Guard personnel perform in many different occupations to support the missions of the Coast Guard. Each year, the Coast Guard has openings for about 4,000 new enlistees in a wide range of challenging careers.

ENLISTMENT

Applicants for enlistment in the Coast Guard must be in good health, possess good moral character, and make at least the minimum required scores on the Armed Services Vocational Aptitude Battery (ASVAB). Coast Guard regular enlistments are for four or six years of active duty. Provided class openings are available, qualified applicants can be guaranteed their choice of specific occupational training under the Coast Guard's Guaranteed School Program. Qualified applicants may also enlist up to 12 months prior to beginning active duty. Coast Guard recruits must be at least 17 years old and must not have reached their 28th birthday on the day of enlistment.

RESERVE COAST GUARD

There are approximately 12,000 Coast Guard Reservists. For those without prior service, enlistment into the Coast Guard Reserve is for a period of eight years. The Coast Guard has four programs for individuals with no prior service experience. Three of the programs are for individuals who are at least 17 and who have not reached their 28th birthday. The other program is for individuals who are at least 26 but have not reached their 36th birthday. The programs all include a period of basic training and class A school or on-the-job training and then release from initial active duty for training. Upon completion, these reservists return to their home and drill with their Reserve units monthly. One of the four programs is a direct petty officer program for persons who possess specialized civilian skills and can convert these skills to the various ratings in the Coast Guard Reserve. Reservists augment the regular Coast Guard component on a regular basis, keeping the spirit of the "One Coast Guard Family."

TRAINING

Two types of training are provided to Coast Guard recruits: recruit training and job training.

Recruit Training

After completing the enlistment process, all Coast Guard recruits attend recruit training, or "boot camp," at Cape May, New Jersey. Boot camp lasts approximately eight weeks; it is designed to provide a transition from civilian life to that of service with the Coast Guard. The course is demanding, both physically and mentally. Coast Guard recruit training instills in each trainee a sense of teamwork and discipline. Coast Guard history, missions, customs, and basic discipline are all part of the training course. Boot camp includes physical training, classroom work, and practical application of the subjects studied.

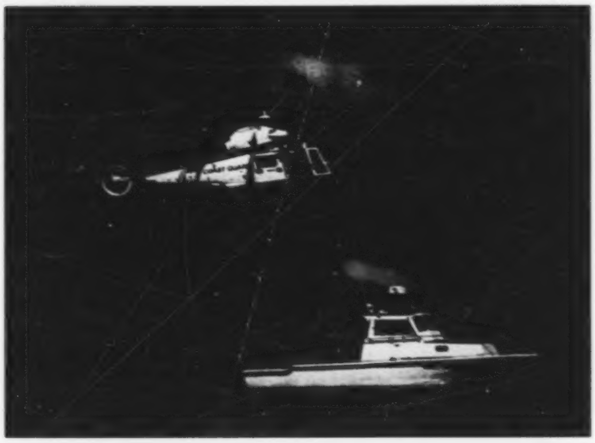
Job Training

The Coast Guard maintains basic petty officer (class A) schools for formal training in specific occupational specialties. Courses of study in these class A schools vary from 8 to 42 weeks, depending on the rating or specialty area taught. Each school provides a course of study that leads to advancement to the Petty Officer Third Class level. Specialty schools in the other services can be used by Coast Guard personnel in addition to, or in place of, Coast Guard schools for training in certain ratings. Upon successful completion of class A school, the graduate becomes a qualified specialist and can expect assignment to a field unit for duty and further on-the-job training in his or her specialty.

Opportunities for additional professional training are available to qualified, career-oriented personnel in the form of advanced petty officer (class B) and special (class C) schools. These advanced schools range in length from a few weeks to several months, depending on the skills taught. Senior enlisted personnel in certain ratings are also eligible to compete for assignment to special degree programs within their occupational specialty areas.

ADVANCEMENT

The Coast Guard enlisted rating structure consists of paths of advancement from pay grade E-1 through E-9. Two general apprenticeships are available within pay grades E-1 through E-3: Fireman (FN) and Seaman (SN). Approximately 25 occupational fields, called ratings, exist in pay grades E-4 through E-9.



Every job in the Coast Guard has a career path leading to increased pay and responsibility—with well-defined promotion criteria. A Coast Guard Seaman Recruit (E-1) is promoted to Seaman Apprentice (E-2) upon completion of basic training. Eligibility for promotion to Seaman or Fireman (E-3) is based on four requirements: adequate time-in-grade, successful demonstration of military and professional qualifications, recommendation of the commanding officer, and completion of correspondence courses.

To earn petty officer ratings (E-4 through E-9), an individual must, in addition to the requirements above, pass the Coast Guard-wide competitive examination for the rating.

A Coast Guard enlisted member can expect to spend the majority of his or her career within the 48 contiguous states, primarily on the East, West, or Gulf Coast. The Coast Guard also has a number of units on the Great Lakes and along the Midwest's river system. At some point in his or her career, a Coast Guard member should expect to serve one or more tours of duty in an overseas assignment. Tour lengths vary from one to four years, depending upon the location of the assignment, the nature of the duty, and the preferences of the individual. The amount of sea duty varies according to the individual's rating and might range from a slight majority to a small fraction of the career. The Coast Guard, the smallest of the military forces, prides itself on its ability to give personal consideration to the needs of its members in the personnel assignment process.

EDUCATION PROGRAMS

The Coast Guard believes strongly in the continued education of its members. The Coast Guard offers several education assistance programs, including:

Tuition Assistance Program

The Coast Guard sponsors a tuition assistance program for off-duty education within the limits of available funds. This program allows Coast Guard personnel, both officer and enlisted, to enroll in off-duty courses at accredited colleges, universities, junior colleges, high schools, and commercial schools. Seventy-five percent of the tuition is paid by the Coast Guard for all courses not in excess of six credits per semester (or quarter) or for any course not extending beyond one semester or a maximum of 17 weeks, whichever is longer.

Physician's Assistant Program

The physician's assistant program is a two-year, full-time course of study at the Duke University Medical Center, Durham, North Carolina. The program includes nine months of elementary scientific principles, terminology, and basic medical science and 15 months of clinical training. Upon successful completion, Coast Guard graduates receive their certificates as physician's assistants and a direct commission as Chief Warrant Officer (Physician's Assistant). In some cases when the student has had additional college courses, completion of the program may result in a bachelor's degree in health science.

Electronics Technology Course

The advanced electronics training program for enlisted personnel is conducted at several locations throughout the country. While the specific courses of study utilized by the Coast Guard vary somewhat from school to school, they all provide a practical and theoretical mix of current state-of-the-art electronics. Electronics technology institutions prepare a Coast Guard member for duty as an engineer's assistant. During their careers, engineer's assistants participate in the design and specification of equipment and equipment modification at headquarters, headquarters' units, district offices, larger shore units, and aboard major vessels. The programs at these institutions are all full-time resident courses and, in most cases, result in the awarding of an associate degree.

FOR FURTHER INFORMATION

Although the preceding section gives a general overview of the Coast Guard and its programs, it by no means covers the wide range of opportunities available in the Coast Guard. Use *Military Careers* to begin exploring career possibilities in the Coast Guard. Your local Coast Guard recruiter would be pleased to supply you with current, more detailed career information. There is no obligation.

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Enlisted Occupational Descriptions

Human Services Occupations

[illegible] Caseworkers and Counselors
[illegible] Religious Program Specialists

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CASEWORKERS AND COUNSELORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Just like some civilians, some military personnel can develop problems with drug or alcohol abuse. Others may develop depression or other emotional problems. Caseworkers and counselors help military personnel and their families to overcome social problems. They work as a part of a team that may include social workers, psychologists, medical officers, chaplains, personnel specialists, and commanders.

What They Do

Caseworkers and counselors in the military perform some or all of the following duties:

- Interview personnel who request help or are referred by their commanders
- Identify personal problems and determine the need for professional help
- Counsel personnel and their families
- Administer and score psychological tests
- Teach classes on human relations
- Keep records of counseling sessions and make reports to supervisors

Physical Demands

Caseworkers and counselors need to speak clearly and distinctly in order to teach classes and work with personnel who have problems.

Helpful Attributes

Helpful school subjects include health, biology, psychology, sociology, social science, and speech. Helpful attributes include:

- Interest in working with people
- Patience in dealing with problems that take time and effort to overcome
- Sensitivity to the needs of others

Work Environment

Caseworkers and counselors usually work in offices or clinics.

Training Provided

Job training consists of 8 to 10 weeks of classroom instruction, including practice in counseling. Course content typically includes:

- Orientation to counseling and social service programs
- Interviewing and counseling methods
- Treatments for drug and alcohol abuse
- Psychological testing techniques

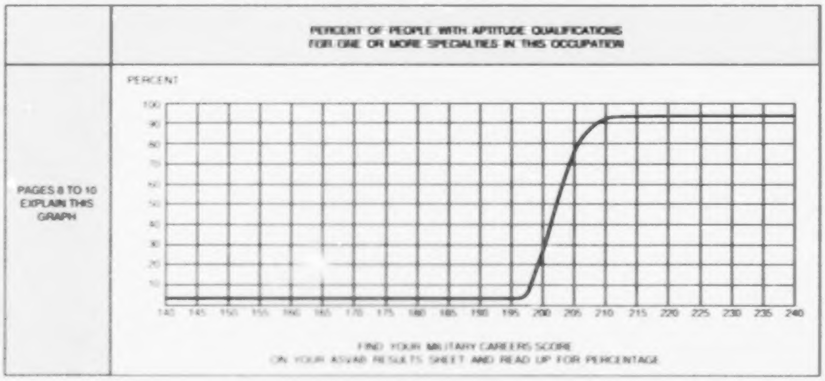
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian caseworkers and counselors work in rehabilitation centers, hospitals, schools, and public agencies. Their duties are similar to duties in the military. Civilian caseworkers and counselors, however, are usually required to have a college degree in social work, psychology, or counseling. They may be called group workers, human relations counselors, or drug and alcohol counselors.

Opportunities

The services have about 2,000 caseworkers and counselors. On average, they need about 150 new caseworkers and counselors each year. After job training, caseworkers and counselors work under close supervision. With experience, they work more independently and may supervise other caseworkers.



RELIGIOUS PROGRAM SPECIALISTS

Army
Navy
Air Force

The military has personnel from many religions and faiths. The military provides chaplains and religious program specialists to help meet the spiritual needs of its personnel. Religious program specialists assist chaplains with religious services, religious education programs, and related administrative duties. Turn to page 400 for more information about religious program specialists.

What They Do

Religious program specialists in the military perform some or all of the following duties:

- Assist chaplains in planning and preparing religious programs and activities
- Assist chaplains in conducting religious services
- Prepare religious, educational, and devotional materials
- Organize charitable and public service volunteer programs
- Maintain relations with religious communities and public service organizations
- Perform administrative duties for chaplains, such as scheduling appointments, handling correspondence, maintaining files, and handling finances

Physical Demands

The ability to speak clearly and distinctly is required to enter this occupation.

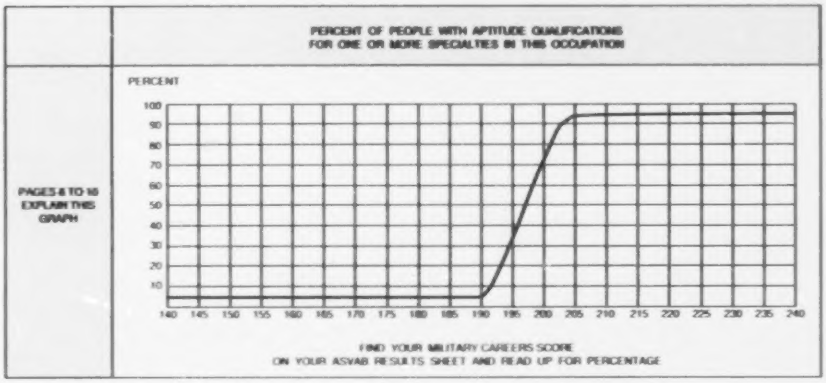
Helpful Attributes

Helpful school subjects include English, public speaking, accounting, and typing. Helpful attributes include:

- Interest in religious guidance
- Sensitivity to the needs of others
- Knowledge of various religious customs and beliefs
- Ability to express ideas clearly and concisely
- Interest in administrative work

Work Environment

Religious program specialists in the military usually work indoors. They also serve aboard ships or with land and air units in the field.



Training Provided

Job training consists of 7 to 8 weeks of classroom instruction. Course content typically includes:

- Principles of religious support programs
- Guidance and counseling techniques
- Leadership skills
- Office procedures

Civilian Counterparts

Civilian religious program specialists help manage churches and religious schools. Their duties are similar to those performed by military religious program specialists, including planning religious programs and preparing religious educational materials. They are also called directors of religious activities.

Opportunities

The services have about 1,500 religious program specialists. On average, they need about 150 new specialists each year. After job training, religious program specialists help chaplains and supervisors with administrative matters. With experience, they gain more responsibility for organizing activities and working in the local community. In time, they may supervise other specialists.

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Media and Public Affairs Occupations

- Audiovisual Production Specialists
- Graphic Designers and Illustrators
- Interpreters and Translators
- Motion Picture Camera Operators
- Musicians
- Photographers
- Radio and Television Announcers
- Reporters and Newswriters

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AUDIOVISUAL PRODUCTION SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Audiovisual productions are an important part of military communications. Typical productions include training films, TV and radio broadcasts, and recordings. They require the teamwork of many specialists. Audiovisual production specialists assist producers, directors, and script writers in producing audiovisual materials. They perform many specialized tasks, ranging from script editing to operating special effects devices.

What They Do

Audiovisual production specialists in the military perform some or all of the following duties:

- Assist producers and directors in selecting and interpreting scripts
- Work with writers in preparing and revising scripts
- Determine the type of presentation needed to convey the message as intended
- Plan and design production scenery, graphics, and special effects
- Help plan the activities of audiovisual production crews
- Operate media equipment and special effects devices

Training Provided

Job training consists of 7 to 12 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Television studio operations
- Television production operations
- Graphic techniques
- Scripting and special effects techniques

Further training occurs on the job and through advanced courses.

Work Environment

Audiovisual production specialists usually work in television or movie studios. They may work outdoors while filming or staging field exercises, sports events, or military parades.

Helpful Attributes

Helpful school subjects include graphics, art, speech, and drama. Helpful attributes include:

- Interest in creative and artistic work
- Preference for working as part of a team
- Experience in school plays or making home movies

Physical Demands

Normal color vision is required to work with scenery, stage settings, graphics, and other color production aids.

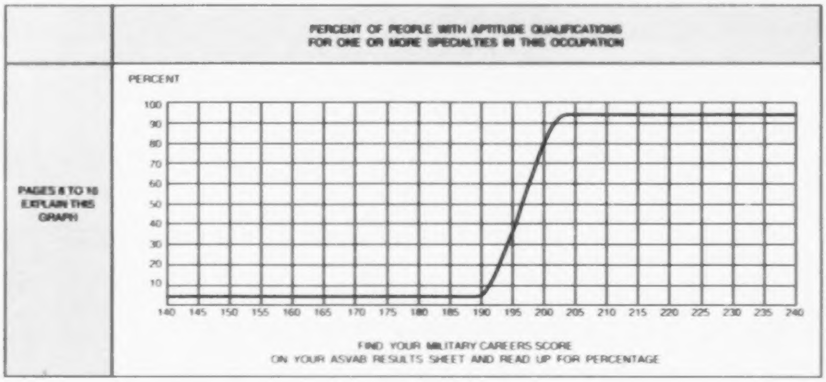
The ability to speak clearly is required for some specialties.

Civilian Counterparts

Civilian audiovisual production specialists work for advertising agencies, radio and television stations, motion picture studios, and educational and training agencies. Their duties are similar to those performed in the military.

Opportunities

The services have about 800 audiovisual production specialists. On average, they need 60 new specialists each year. After job training, specialists work under close supervision assisting with various productions. With experience, they gain responsibility for planning parts of productions. In time, they may supervise others and become production crew superintendents.



GRAPHIC DESIGNERS AND ILLUSTRATORS

Army
Navy
Air Force
Marine Corps

The military produces many publications, such as training manuals, newspapers, reports, and promotional materials. Graphic artwork is used in these publications and for signs, charts, posters, and TV and motion picture productions. Graphic designers and illustrators produce graphic artwork, drawings, and other visual displays.

What They Do

Graphic designers and illustrators in the military perform some or all of the following duties:

- Produce computer-generated graphics
- Draw graphs and charts to represent budgets, numbers of troops, supply levels, and office organization
- Develop ideas and design posters and signs
- Help instructors design artwork for training courses
- Draw illustrations of parts of the human body for medical training
- Draw cartoons for filmstrips and animation for films
- Make silkscreen prints
- Work with TV and film producers to design backdrops and props for film sets

Physical Demands

Coordination of eyes, hands, and fingers are needed to draw sketches.

Normal color vision is required to work with paints, watercolors, and other art materials.

Work Environment

Graphic designers and illustrators usually work in offices on land or aboard ships.

Training Provided

Job training consists of about 12 weeks of classroom instruction including practice in preparing graphic designs and illustrations. Course content typically includes:

- Introduction to graphics, lettering, drawing, and layout techniques
- Illustration and television graphic techniques
- Theory and use of color

The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Helpful Attributes

Helpful school subjects include art, drafting, and geometry. Helpful attributes include:

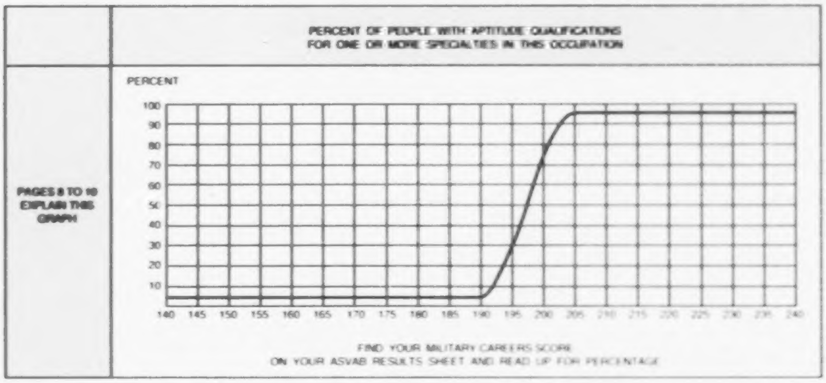
- Interest in artwork or lettering
- Ability to convert ideas into visual presentations
- Neatness and an eye for detail

Civilian Counterparts

Civilian graphic designers and illustrators work for government agencies, advertising agencies, print shops, and engineering firms. They also work for many large organizations that have their own graphics departments. Their duties are similar to military graphic designers and illustrators. They may be known as commercial artists or graphic arts technicians.

Opportunities

The services have about 1,200 graphic designers and illustrators. On average, they need about 150 new designers and illustrators each year. After job training, graphic designers prepare tables, signs, and graphics under close supervision. With experience, they help formulate and produce more complex designs. In time, they may supervise others and lead large projects. Eventually, they may manage graphics departments.



INTERPRETERS AND TRANSLATORS

Army
Navy
Air Force
Marine Corps

The military must be able to read and understand the many languages of the world. Information from foreign language newspapers, magazines, and radio broadcasts is important to the nation's defense. Interpreters and translators convert written or spoken foreign languages into English or other languages. They usually specialize in a particular foreign language.

What They Do

Interpreters and translators in the military perform some or all of the following duties:

- Translate written and spoken foreign language material to and from English, making sure to preserve the original meaning
- Interrogate (question) prisoners of war, enemy deserters, and civilian informers in their native languages
- Record foreign radio transmissions using sensitive radios
- Prepare written reports about the information obtained
- Translate foreign documents, such as battle plans and personnel records
- Translate foreign books and articles describing foreign equipment and construction techniques

Physical Demands

Normal hearing and the ability to speak clearly and distinctly are usually required to enter this occupation.

Special Requirements

Fluency in a foreign language is required to enter most specialties within this occupation. Although there are women interpreters and translators, some specialties in this occupation are open only to men.

Work Environment

Interpreters and translators normally work on military bases, aboard ships, or in airplanes.

Helpful Attributes

Helpful school subjects include speech and typing. Helpful attributes include:

- Interest in foreign languages
- Interest in working with people
- Interest in reading

Training Provided

Job training consists of 7 to 20 weeks of classroom instruction including practice in interpretation. Training length varies depending on specialty. Longer training is necessary for specialties that do not require foreign language fluency prior to entry. For these specialties, foreign language training for 6 to 12 months is provided. Course content typically includes:

- Interrogation (questioning) methods
- Use and care of radios
- Procedures for preparing reports

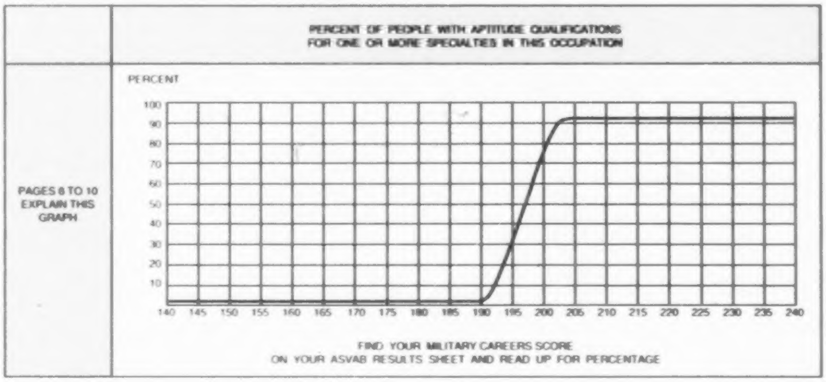
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian interpreters and translators work for government agencies, embassies, universities, and companies that conduct business overseas. Their work is similar to the work of military interpreters and translators.

Opportunities

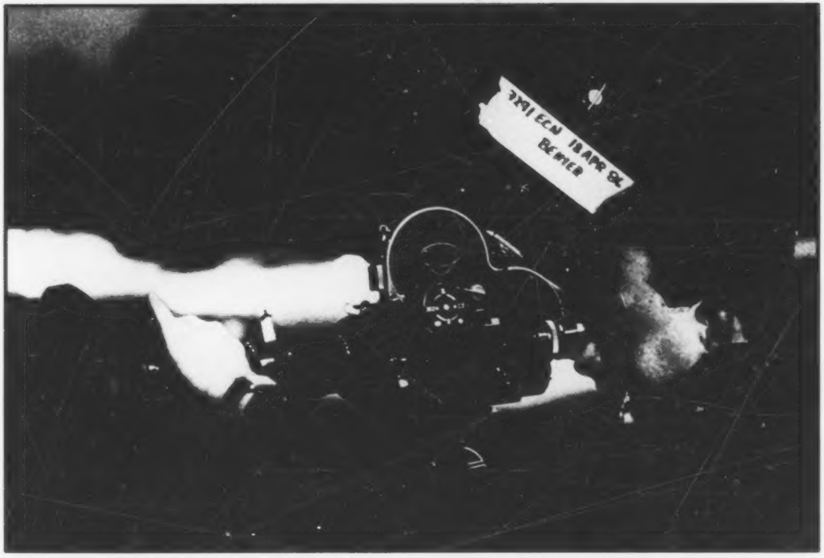
The military has about 7,800 interpreters and translators. On average, the services need about 1,200 new interpreters and translators each year. After job training, interpreters and translators work under the direction of more experienced workers and supervisors. With experience, they work more independently. In time, interpreters and translators may become directors of translation for large bases.



MOTION PICTURE CAMERA OPERATORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Television and film productions are an important part of military communications. Films are used for training in many military occupations. They are also used to record military operations, ceremonies, and news events. Motion picture camera operators film actual or simulated scenes using motion picture equipment. They also operate television cameras in military TV studios.



What They Do

Motion picture camera operators in the military perform some or all of the following duties:

- Set up and operate motion picture equipment, including cameras, sound recorders, and lighting
- Operate television cameras in TV studios and remote sites
- Follow script and instructions of film or TV directors to move cameras, zoom, pan, or adjust focus

Helpful Attributes

Helpful school subjects include photography, art, and mathematics. Helpful attributes include:

- Interest in photography
- Experience in making home movies
- Ability to follow detailed, spoken directions

Physical Demands

Normal color vision is required to adjust light filters and camera controls.

Training Provided

Job training consists of 7 to 14 weeks of instruction, including practice in motion picture filming. Training length varies depending on specialty. Course content typically includes:

- Motion picture equipment operation
- Filming controlled and uncontrolled events
- Composition and camera movement
- TV studio operations
- Audio recording

The Army, Navy, and Marine Corps offer certified apprenticeship programs for one specialty in this occupation.

Work Environment

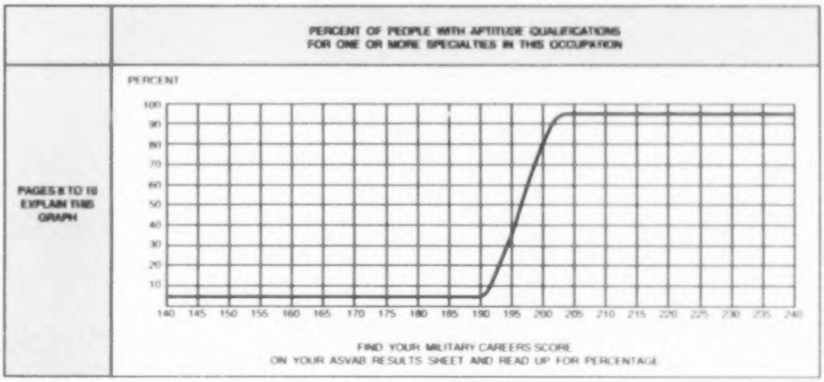
Motion picture camera operators work in studios and outdoors on location. They sometimes film from aircraft or ships. They travel and work in all climates.

Civilian Counterparts

Civilian motion picture camera operators work for film production companies, TV networks and stations, and government audiovisual studios. Some work as independent film makers. Their duties are similar to military motion picture camera operators.

Opportunities

The services have about 900 motion picture camera operators. On average, they need about 80 new operators each year. After job training, operators assist with many aspects of film or TV production. With experience, they become more involved in planning and directing productions. Eventually, they may become directors of photography for one or more film crews or technical chiefs of TV studios.



MUSICIANS

Army
Navy
Air Force
Marine Corps
Coast Guard

Music is an important part of military life. Service bands and vocal groups have a strong tradition of performing at ceremonies, parades, concerts, festivals, and dances. Musicians and singers perform in service bands, orchestras, and small groups. They perform many types of music, including marches, classics, jazz, and popular music.

What They Do

Musicians in the military perform some or all of the following duties:

- Play in or lead bands, orchestras, combos, and jazz groups
- Sing in choral groups or as soloists
- Perform for ceremonies, parades, concerts, festivals, and dances
- Rehearse and learn new music when not performing
- Play brass, percussion, woodwind, or string instruments

Special Requirements

To qualify for a service band, applicants must pass one or more auditions. They must be fairly accomplished musicians and have good music sight-reading ability.

Helpful Attributes

Helpful school subjects include band, music theory, harmony, and other music courses. Helpful attributes include:

- Poise when performing in public
- Ability to play more than one instrument
- Ability to sing

Work Environment

Musicians play indoors in theaters, concert halls and at dances; outdoors at parades and open-air concerts. They travel regularly.

Training Provided

Although musicians must be musically proficient to enter the service, music training is given to new band members. Job training consists of 11 to 24 weeks of classroom instruction, including practice playing instruments. Training length varies depending on musical specialty. Course content typically includes:

- Music theory
- Group instrumental techniques
- Sight-reading musical scores
- Dance band techniques

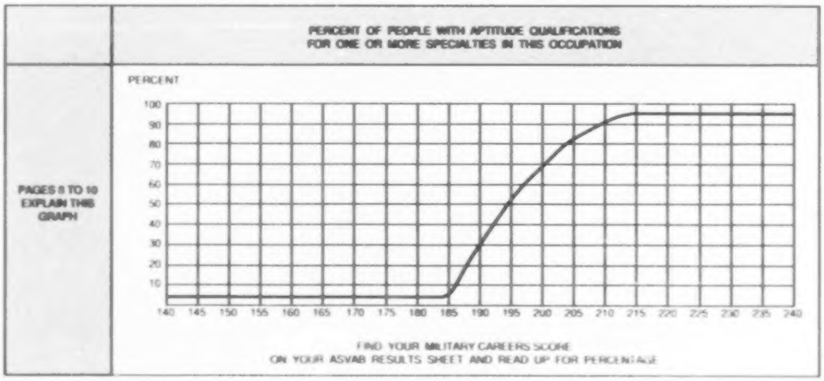
Further training occurs on the job through regular rehearsals and individual practice.

Civilian Counterparts

Civilian musicians work for many types of employers, including professional orchestras, bands, and choral groups. They work in nightclubs, concert halls, theaters, and recording studios.

Opportunities

The services have about 5,000 musicians. On average, they need about 450 new musicians each year. After job training, musicians are assigned to band units located with U.S. forces around the world. They perform as members of bands and vocal groups. In time, they may become head of their instrument section and, possibly, bandleader or orchestra conductor. The most outstanding performers are selected for the official service bands or orchestras of their service.



PHOTOGRAPHERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses photographs for many purposes, such as intelligence gathering and news reporting. Aerial photographs record foreign military movements and weapon placement. Photographs are also used for news, publicity, training, and map-making. Photographers take and develop still photographs in color or black and white.

What They Do

Photographers in the military perform some or all of the following duties:

- Select camera, film, and other equipment needed for photo assignments
- Determine camera angles, lighting, and any special effects needed
- Take still photos of people, events, military equipment, land areas, and other subjects
- Develop and retouch negatives
- Print and duplicate photos or slides
- Write captions or news articles about the subjects in the photographs

Work Environment

Photographers routinely travel to photograph their subjects on location. They work both indoors and outdoors in all climates. They sometimes take photographs from aircraft or ships.

Physical Demands

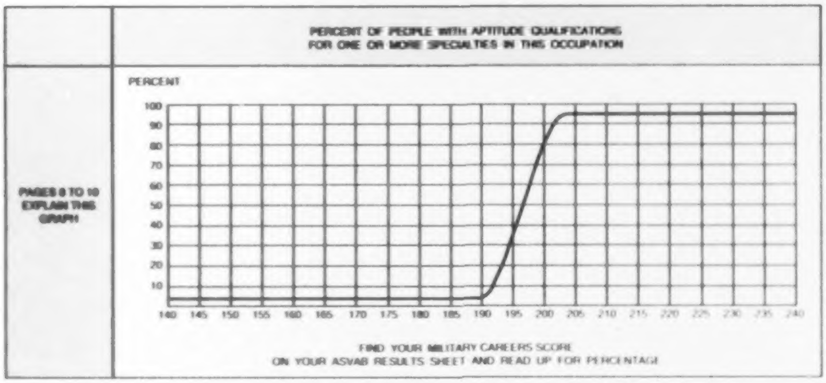
Normal color vision is required to work with color photography.

Training Provided

Job training consists of 7 to 22 weeks of instruction, including practice in taking and developing photographs. Length of training varies depending on the specialty. Course content typically includes:

- Principles of photojournalism
- Photographic processing and reproduction
- Operation and maintenance of photographic equipment

The Army, Navy, and Marine Corps offer certified apprenticeship programs for one specialty in this occupation.



Helpful Attributes

Helpful school subjects include photography, art, chemistry, and mathematics. Helpful attributes include:

- Interest in photography
- A good eye for composing subjects to be photographed
- Ability to recognize interesting photo subjects

Civilian Counterparts

Civilian photographers work for photography studios, newspapers, magazines, advertising agencies, and large businesses. Some photographers free-lance (work independently). Depending on the specialty, they may be known as photojournalists, aerial photographers, or still photographers.

Opportunities

The services have about 2,400 photographers. On average, they need about 250 new photographers each year. After job training, photographers work under supervision on special assignments. With experience, they are given responsibility to select photo subjects and are permitted to work more independently. In time, they may become supervisors of photographic laboratories or of news offices.

RADIO AND TELEVISION ANNOUNCERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses radio and television to present news, entertainment, and information of special interest to military personnel. Radio and TV provide a special link to home for U.S. military forces overseas. Radio and television announcers write and present news programs, music programs, and radio talk shows. In small stations, they may also produce and direct programs.

What They Do

Radio and television announcers perform some or all of the following duties:

- Investigate and write news stories
- Choose topics of special interest for broadcast
- Narrate special event broadcasts
- Interview guests
- Assist public affairs officers in responding to inquiries from commercial broadcast media
- Maintain tape, film, and record libraries

Training Provided

Job training consists of 10 to 12 weeks of classroom instruction, including practice in actual announcing. Course content typically includes:

- Newswriting
- Announcing and interviewing techniques
- Programming and production techniques
- Military broadcasting procedures

Helpful Attributes

Helpful school subjects include English, journalism, public speaking, and typing. Helpful attributes include:

- Ability to write clearly and concisely
- Strong, clear speaking voice
- Interest in music, sports, and current events

Work Environment

Radio and television announcers usually work in broadcasting studios on land or aboard ships.

Special Requirements

Basic typing ability is required to enter some specialties in this occupation.

Opportunities

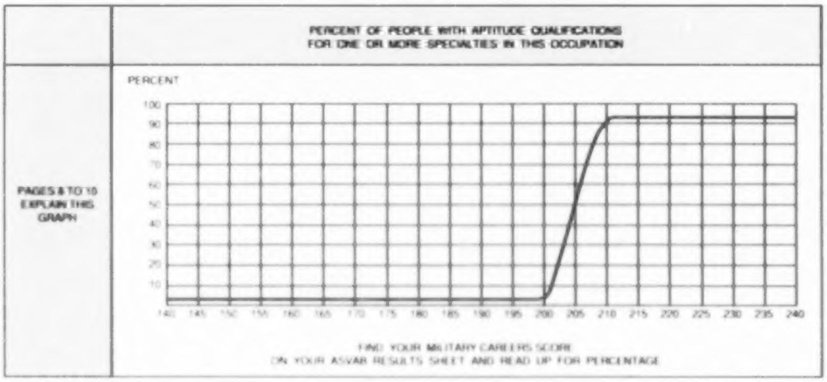
The military has about 300 radio and television announcers. On average, the services need about 20 new announcers each year. Radio and television announcers usually work with little supervision. As they gain experience, they may manage broadcasting stations.

Physical Demands

Radio and television announcers are required to pass a voice audition. A clear speaking ability is also required.

Civilian Counterparts

Civilian radio and television announcers work for commercial and public broadcasting firms, as well as other businesses in the entertainment industry. They perform duties similar to their military counterparts. They are employed as newscasters, disc jockeys, writers, directors, and producers. Civilian radio and television announcers may also work as station managers or supervisors.



REPORTERS AND NEWSWRITERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military publishes newspapers and broadcasts television and radio programs for its personnel and the public. These news services are an important source of general information about people and events in the military. Reporters and newswriters investigate and write news articles for publication and broadcast. Turn to page 402 for more information about reporters and newswriters.

What They Do

Reporters and newswriters in the military perform some or all of the following duties:

- Gather information for military news programs and publications
- Write radio and TV scripts
- Develop ideas for news articles
- Arrange and conduct interviews
- Collect information for commercial media use
- Select photographs and write captions for news articles
- Write news releases, feature articles, and editorials

Helpful Attributes

Helpful school subjects include English, journalism, speech, typing, and media communications. Helpful attributes include:

- Ability to keep detailed and accurate records
- Interest in researching facts and issues for news stories
- Ability to write clearly and concisely

Physical Demands

Normal color vision is required for some specialties for taking and developing photographs.

Training Provided

Job training consists of 9 to 11 weeks of classroom instruction. Course content typically includes:

- Newswriting and research
- Interviewing techniques
- Newspaper format and layout
- Photojournalism (writing news stories featuring pictures)
- Radio and television programming and production

Work Environment

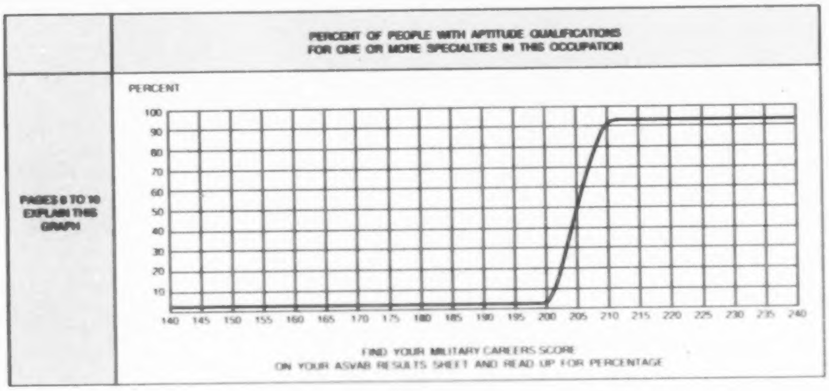
Reporters and newswriters work indoors or outdoors, depending upon the research needed for their articles.

Civilian Counterparts

Civilian reporters and newswriters work for newspapers, magazines, wire services, and radio and television stations. Their duties are similar to those performed by military reporters and newswriters. However, civilians often specialize in one area of coverage, such as politics, sports, film, or foreign affairs. They may be called copy writers, editors, news editors, editorial assistants, or correspondents.

Opportunities

The military has about 2,300 reporters and newswriters. On average, the services need about 200 new reporters and newswriters each year. After job training, they research news stories under close supervision. With experience, they work more independently and are given more editorial control over news stories. Eventually, reporters and newswriters may become editorial assistants or editors of military publications or broadcast programs.



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Health Care Occupations

- Cardiopulmonary and EEG Technicians
- Dental Specialists
- Medical Laboratory Technicians
- Medical Record Technicians
- Medical Service Technicians
- Nursing Technicians
- Occupational Therapy Specialists
- Operating Room Technicians
- Optometric Technicians
- Orthopedic Technicians
- Orthotic Specialists
- Pharmacy Technicians
- Physical Therapy Specialists
- Radiologic (X-Ray) Technicians
- Respiratory Therapists

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CARDIOPULMONARY AND EEG TECHNICIANS

Army
Navy
Air Force

Military health care includes medical treatment for heart, lung, and brain disorders. Doctors need sophisticated tests to help diagnose and treat these problems. Cardiopulmonary and EEG (electroencephalograph) technicians administer a variety of diagnostic tests of the heart, lungs, blood, and brain. They operate complex electronic testing equipment.

What They Do

Cardiopulmonary and EEG technicians in the military perform some or all of the following duties:

- Take patients' blood pressure readings
- Attach electrodes or microphones to patients' bodies
- Help doctors revive heart attack victims
- Adjust settings and operate test equipment
- Watch dials, graphs, and screens during tests
- Talk to physicians to learn what tests or treatments are needed
- Keep records of test results and discuss them with medical staff
- Operate electrocardiographs, electroencephalographs, and other test equipment

Helpful Attributes

Helpful school subjects include algebra, chemistry, biology, or related courses. Helpful attributes include:

- Interest in electronic equipment
- Ability to follow strict standards and procedures
- Interest in learning how the heart, lungs, and blood work together
- Ability to keep accurate records

Work Environment

Cardiopulmonary and EEG technicians usually work in hospitals and clinics. In combat situations, they may work in mobile field hospitals.

Physical Demands

Normal color vision is required for some specialties in order to set up and monitor equipment.

Training Provided

Job training consists of 26 to 30 weeks of classroom instruction. Course content typically includes:

- Diagnostic procedures
- Operation and maintenance of diagnostic equipment
- Preparation of patients for testing
- Methods of resuscitation

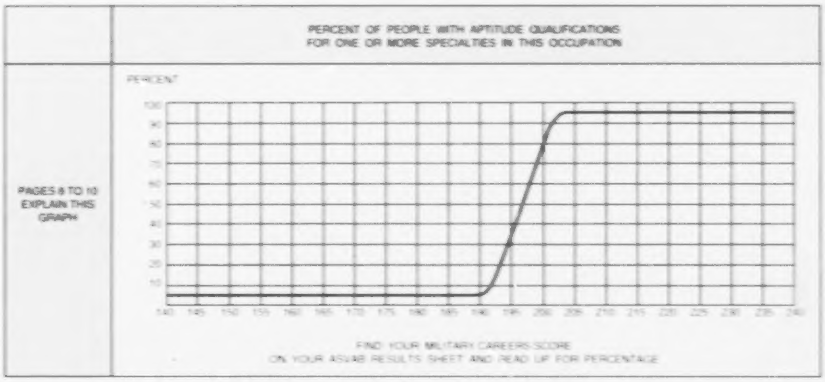
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian cardiopulmonary and EEG technicians work in hospitals, clinics, and doctors' offices. Their duties are similar to those performed in the military. They may specialize in either cardiovascular (heart), pulmonary (lungs), or electroencephalographic (brain) testing.

Opportunities

The services have about 1,700 cardiopulmonary and EEG technicians. On average, they need 60 new technicians each year. After job training, new technicians are assigned to hospitals and clinics, where they work under the supervision of physicians and senior technicians. With experience, they may supervise others and assist in managing clinics.



DENTAL SPECIALISTS

Army
Navy
Air Force
Coast Guard

Dental care is one of the health services provided to all military personnel. It is available in military dental clinics all over the world. Dental specialists assist military dentists in examining and treating patients. They also help manage dental offices.

What They Do

Dental specialists in the military perform some or all of the following duties:

- Help dentists perform oral surgery
- Prepare for patient examinations by selecting and arranging instruments and medications
- Help dentists during examinations by preparing dental compounds and operating dental equipment
- Clean patients' teeth using scaling and polishing instruments and equipment
- Operate dental X-ray equipment and process X-rays of patients' teeth, gums, and jaws
- Provide guidance to patients on daily care of their teeth
- Perform administrative duties, such as scheduling office visits, keeping patient records, and ordering dental supplies

Civilian Counterparts

Civilian dental specialists work in dental offices or clinics. Their work is similar to work in the military. They typically specialize in assisting dentists to treat patients, provide clerical support (dental assistants), or clean teeth (dental hygienists).

Physical Demands

Dental specialists must sometimes stand for long periods.

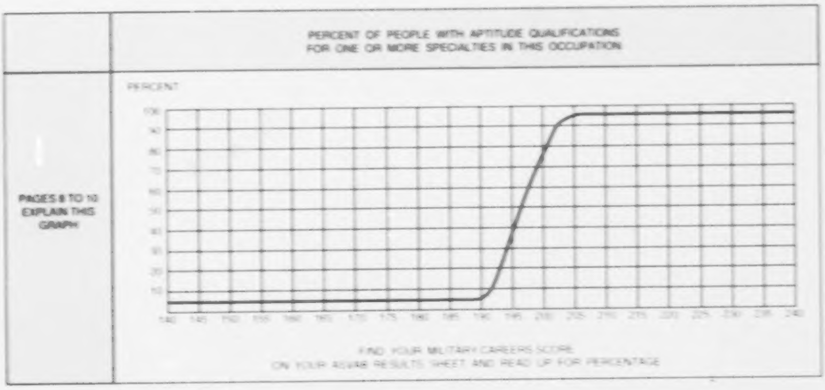
Special Requirements

A minimum age of 18 is required for this occupation.

Helpful Attributes

Helpful school subjects include biology and chemistry. Helpful attributes include:

- Good eye-hand coordination
- Ability to follow spoken instructions
- Ability to follow detailed procedures
- Interest in working with people



Training Provided

Job training consists of 9 to 14 weeks of classroom instruction, including practice in dental care tasks. Course content typically includes:

- Preventive dentistry
- Radiology (X-ray) techniques
- Dental office procedures
- Dental hygiene procedures

Further training occurs on the job and through advanced courses. The Navy offers a certified apprenticeship program for one specialty in this occupation.

Work Environment

Dental specialists in the military usually work indoors in dental offices or clinics. Some specialists may be assigned to duty aboard ships.

Opportunities

The military has about 7,500 dental specialists. On average, the services need about 800 new specialists each year. After job training, new specialists are assigned to dental offices or clinics, where they work under the supervision of dentists. With experience, dental specialists perform more difficult tasks involving patient care. In time, they may become responsible for assisting dental officers in the management of dental programs.

MEDICAL LABORATORY TECHNICIANS

Army
Navy
Air Force
Coast Guard

Medical laboratories are an important part of the military health care system. The staffs of medical laboratories perform clinical tests required to detect and identify diseases in patients. Medical laboratory technicians conduct tests on the tissue, blood, and body fluids of medical patients.

What They Do

Medical laboratory technicians in the military perform some or all of the following duties:

- Use lab equipment to analyze specimens (samples) of tissue, blood, and body fluids
- Examine blood and bone marrow under microscopes
- Test specimens for bacteria or viruses
- Draw blood from patients
- Assist in collecting specimens at autopsies (medical examinations of the dead)
- Record and file results of laboratory tests

Training Provided

Job training consists of 12 to 36 weeks of classroom and on-the-job instruction, including practice in testing specimens. Training length varies depending on specialty. Course content typically includes:

- Medical laboratory procedures
- Study of human parasites and diseases
- Laboratory administration and record keeping

Civilian Counterparts

Civilian medical laboratory technicians usually work for privately owned laboratories, hospitals, clinics, or research institutions. They perform duties similar to military medical laboratory technicians.

Work Environment

Medical laboratory technicians work in medical centers, clinics, and hospitals on land or aboard ships.

Helpful Attributes

Helpful school subjects include biology, chemistry, and algebra. Helpful attributes include:

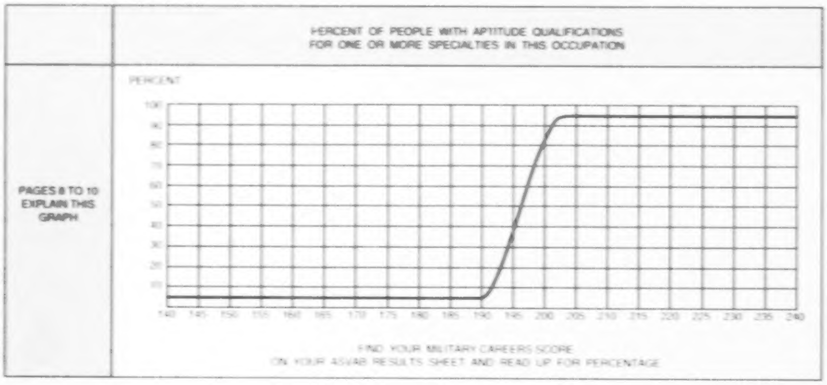
- Interest in scientific and technical work
- Ability to follow detailed procedures precisely

Physical Demands

Normal color vision is required to work with colored chemicals and dyes.

Opportunities

The military has about 5,200 medical laboratory technicians. On average, the services need about 650 new technicians each year. After job training, technicians perform routine laboratory tests under close supervision. With experience, they do more complex testing and analysis and work more independently. After demonstrating job proficiency, medical laboratory technicians help train new technicians and supervise laboratory personnel. In time, they may advance to laboratory management positions.



MEDICAL RECORD TECHNICIANS

Army
Navy
Air Force
Coast Guard

Medical records are important for health care delivery. To provide proper treatment, doctors need complete and accurate information about patient symptoms, test results, illnesses, and prior treatments. Medical record technicians prepare and maintain patient records, reports, and correspondence.

What They Do

Medical record technicians in the military perform some or all of the following duties:

- Fill out admission and discharge records for patients entering and leaving military hospitals
- Assign patients to hospital rooms
- Prepare daily reports about patients admitted and discharged
- Organize, file, and maintain medical records
- Type reports about physical examinations, illnesses, and treatments
- Prepare tables of medical statistics
- Maintain libraries of medical publications

Work Environment

Medical record technicians work in admissions or medical records sections of hospitals and clinics. They work in land-based facilities and aboard ships.

Helpful Attributes

Helpful school subjects include general science and business administration. Helpful attributes include:

- Interest in work requiring accuracy and attention to detail
- Ability to communicate well
- Interest in using typewriters and other office machines

Training Provided

Job training consists of 6 to 18 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

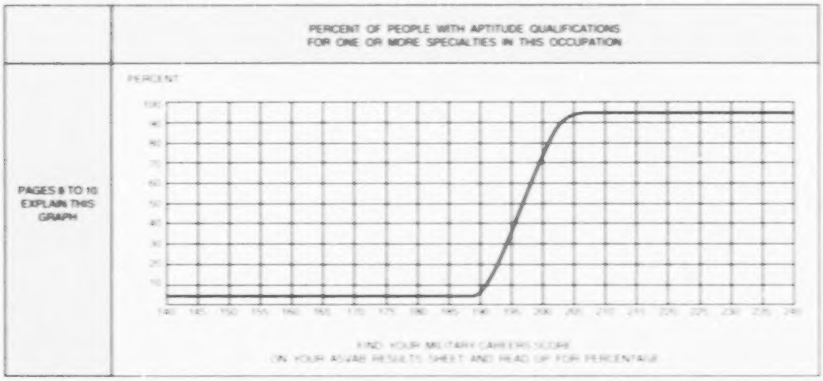
- Medical terminology
- Medical records preparation and maintenance
- Maintenance of medical libraries
- Basic typing skills

Civilian Counterparts

Civilian medical record technicians usually work for hospitals, clinics, and government health agencies. They perform duties similar to military medical record technicians. However, civilian medical record technicians tend to specialize in areas such as admissions, ward, or outpatient records. Those working in admission or discharge units are called admitting or discharge clerks.

Opportunities

The services have about 12,700 medical record technicians. On average, they need about 750 new technicians each year. After training, new technicians are assigned to hospitals or clinics, where they work under close supervision. With experience, they may assume supervisory positions and may manage medical record units or admission or discharge units.



MEDICAL SERVICE TECHNICIANS

Army
Navy
Air Force
Coast Guard

In emergencies or in combat, physicians are not always immediately available to treat the injured or wounded. When a doctor is not available, medical service technicians provide basic and emergency medical treatment. They also assist medical officers in caring for sick and injured patients. Turn to page 386 for more information about medical service technicians.

What They Do

Medical service technicians in the military perform some or all of the following duties:

- Examine and treat emergency or battlefield patients
- Interview patients and record their medical histories
- Take patients' temperature, pulse, and blood pressure
- Prepare blood samples for laboratory analysis
- Keep health records and clinical files up to date
- Give shots and medicines to patients

Work Environment

Medical service technicians usually work in hospitals and clinics on land or aboard ships. Medical service technicians may give emergency medical treatment in the field.

Training Provided

Job training consists of 16 to 54 weeks of classroom instruction, depending on specialty. Course content typically includes:

- Emergency medical treatment
- Basic nursing care
- Study of the human body
- Minor surgical procedures
- Clinical laboratory procedures
- Methods for diagnosing diseases

Further training occurs on the job and through advanced courses.

Physical Demands

Medical service technicians may have to lift and carry wounded or injured personnel during emergency situations. Air medical evacuation specialists must pass a flight physical exam.

Civilian Counterparts

Civilian medical service technicians work in hospitals, clinics, nursing homes, and rehabilitation centers. They perform duties similar to those performed by medical service technicians in the military. Civilian medical service technicians are known for the type of work they do: emergency medical technicians treat victims of accidents, fire, or heart attacks; medical assistants work for physicians and perform routine medical and clerical tasks; medication aides give shots and medicine under the close supervision of physicians; and physician assistants perform routine examinations and treatment for physicians.

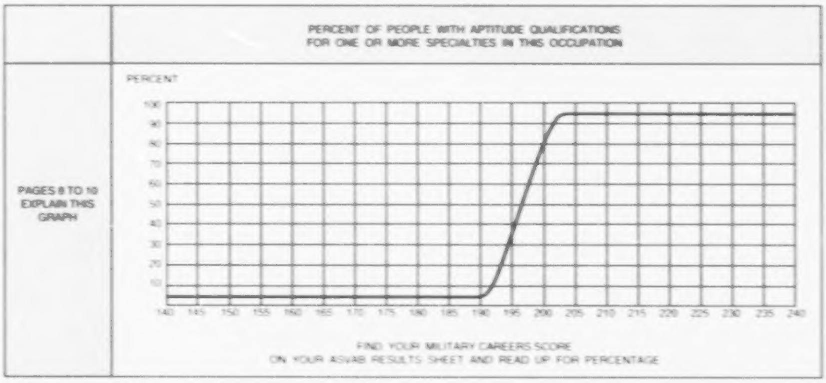
Helpful Attributes

Helpful school subjects include chemistry, biology, psychology, general science, and algebra. Helpful attributes include:

- Interest in helping and caring for others
- Ability to communicate effectively
- Ability to work under stressful conditions

Opportunities

The services have about 35,900 medical service technicians. On average, they need about 6,200 new technicians each year. After job training, technicians are assigned to serve in their medical specialty. They work under the direction and supervision of medical officers and experienced medical service technicians. Eventually, they may advance to supervisory positions and help manage a medical facility.



NURSING TECHNICIANS

Army
Navy
Air Force

The military provides medical care to all men and women in the services. Nursing teams give patients the personal treatment and individual attention required to help them recover from illness or injury. Nursing technicians assist doctors and registered nurses in providing care and treatment to patients.

What They Do

Nursing technicians in the military perform some or all of the following duties:

- Provide bedside care in hospitals, including taking the body temperature, pulse, and respiration rate of patients
- Serve food and feed patients requiring help
- Bathe and dress patients
- Change bed linens and clean hospital rooms
- Observe patients and inform nurses or doctors if problems develop
- Give medication to patients, under the direction of doctors and nurses
- Drive ambulances and assist doctors and nurses in providing emergency treatment

Physical Demands

Nursing technicians may have to lift and support patients. Air medical evacuation specialists must pass a flight physical exam.

Work Environment

Nursing technicians work in hospitals and clinics on land or aboard ships. In combat situations, they may work in mobile field hospitals.

Training Provided

Job training consists of 7 to 40 weeks of classroom instruction, including practice in patient care. Training length varies depending on specialty. Course content typically includes:

- Basic hospital procedures
- Patient care techniques
- Emergency medical techniques

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include general science, biology, and psychology. Helpful attributes include:

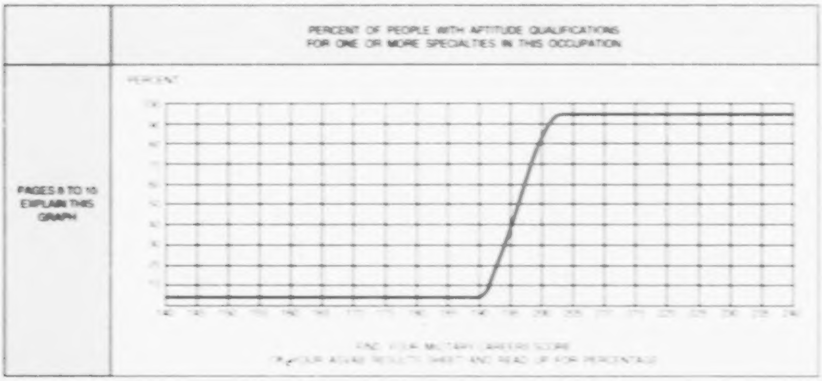
- Desire to help others
- Interest in working in the health field
- Ability to follow directions precisely

Civilian Counterparts

Civilian nursing technicians work in hospitals, nursing homes, rehabilitation centers, psychiatric hospitals, or doctors' offices. Their work is similar to duties performed in the military. Those with less than a year of formal training may be called nurses aides, orderlies, or psychiatric aides. Those who have completed practical nurse training are called practical nurses or licensed practical nurses.

Opportunities

The services have about 11,900 nursing technicians. On average, they need about 1,000 new technicians each year. After job training, technicians are assigned to hospitals and clinics, where they work under close supervision. With experience, they work more independently and may help train others. With additional training, they may transfer to related health care service occupations, such as radiology technician or medical lab technician.



OCCUPATIONAL THERAPY SPECIALISTS

Army
Navy
Air Force
Coast Guard

Occupational therapy is a program of exercise and treatment for patients disabled by illness or injury. Occupational therapy helps patients adjust to disabilities, regain independence, and prepare to return to work. Occupational therapy specialists help rehabilitate patients with physical or emotional problems. They assist occupational therapists in administering therapy programs.

What They Do

Occupational therapy specialists in the military perform some or all of the following duties:

- Interview patients to determine the extent of problems
- Test patients to determine physical and mental abilities
- Assist occupational therapists to plan exercise schedules
- Schedule patients for treatment
- Fit and adjust artificial limbs (prostheses)
- Teach patients new mobility skills
- Set up and maintain equipment, such as exercise machines and whirlpools

Helpful Attributes

Helpful school subjects include general science, biology, and psychology. Helpful attributes include:

- Interest in working with and helping people
- Patience to work with long-term disabilities
- Ability to communicate effectively

Civilian Counterparts

Civilian occupational therapy specialists work for hospitals, schools, rehabilitation centers, and community mental health centers. They perform duties similar to military occupational therapy specialists. Civilian occupational therapy specialists tend to specialize in the types of patients they serve, such as children, persons who have lost arms or legs (amputees), or the elderly. They may also be called occupational therapy assistants or occupational therapy aides.

Work Environment

Occupational therapy specialists work in hospitals and clinics.

Training Provided

Job training consists of 25 to 31 weeks of classroom instruction, including practice in applying occupational therapy techniques. Course content typically includes:

- Anatomy, physiology, and psychology (the study of the body, body functions, and the mind)
- Methods of therapy, including massage, electric therapy, and radiation therapy
- Procedures for assisting occupational therapists

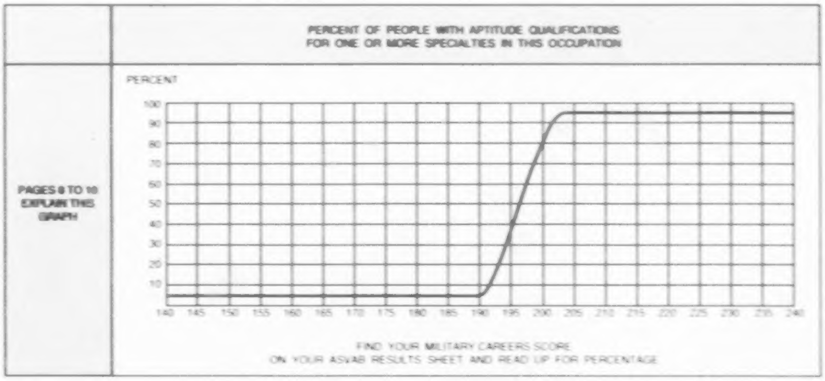
Further training occurs on the job and through advanced courses.

Physical Demands

Occupational therapy specialists must sometimes lift and support patients during exercises and treatments.

Opportunities

The military has about 200 occupational therapy specialists. On average, the services need about 30 new specialists each year. After job training, occupational therapy specialists provide routine therapy care, such as operating whirlpool equipment, under the direction of supervisors. With experience, they work with patients with more serious problems. Eventually they have the opportunity to become supervisors, planning and directing the activities of other occupational therapy specialists.



OPERATING ROOM TECHNICIANS

Army
Navy
Air Force
Coast Guard

Surgery is a major element of the medical care provided by the military. It is required to treat many injuries and diseases. During combat, surgery is often required to treat the wounded. Surgical operations are performed by teams of doctors, nurses, and other health care specialists. Operating room technicians prepare operating rooms, equipment, and supplies for use during surgery. They also remove stitches, hold instruments, and supply sterile materials as directed by surgeons.

What They Do

Operating room technicians in the military perform some or all of the following duties:

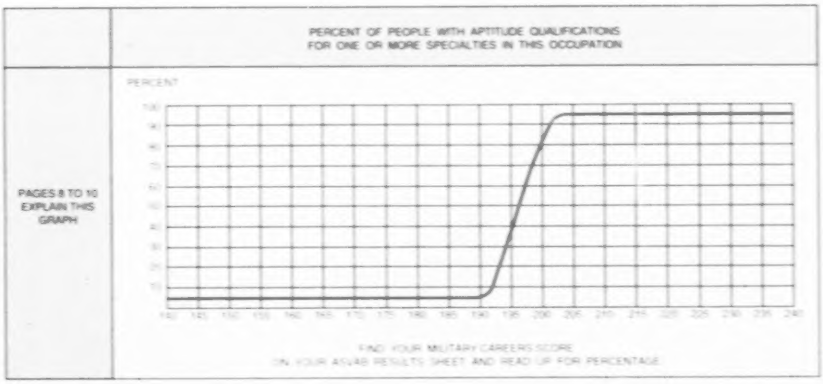
- Prepare patients for surgery
- Clean and disinfect operating rooms
- Sterilize instruments
- Prepare surgical supplies and equipment
- Keep count of sponges, needles, and instruments used in surgery
- Pass sterile instruments and supplies to surgeons

Physical Demands

Operating room technicians need sufficient strength to lift and move patients while preparing them for surgery. They must have a normal skin condition to guard against infection.

Work Environment

Operating room technicians usually work in hospitals or clinics on land or aboard ships. In combat situations, they may work in mobile field hospitals.



Helpful Attributes

Helpful school subjects include general science, biology, chemistry, hygiene, and psychology. Helpful attributes include:

- Interest in helping others
- Ability to follow spoken instructions
- Ability to work under stressful or emergency conditions

Training Provided

Job training consists of 8 to 26 weeks of classroom instruction, including practice in operating room procedures. Training length varies depending on specialty. Course content typically includes:

- Methods of sterilizing surgical equipment and instruments
- Identification and care of surgical instruments
- Scrub assistant duties
- Pre- and post-operative patient care

Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian operating room technicians work in hospitals, surgical clinics, and emergency medical clinics. Their duties are similar to those performed in the military.

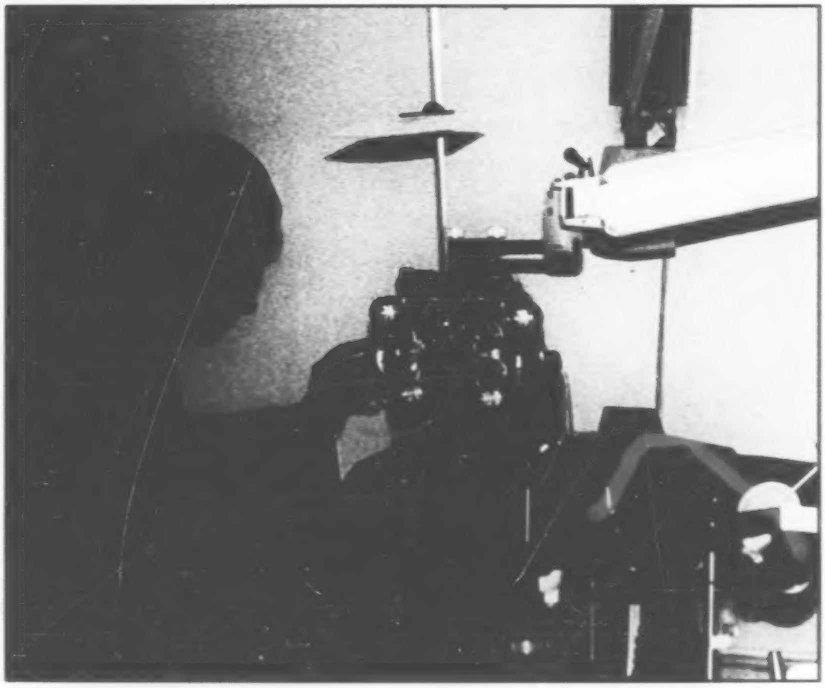
Opportunities

The services have about 2,800 operating room technicians. On average, they need about 300 new technicians each year. After job training, new technicians are assigned to hospitals or medical units, where they work under the direction of operating room nurses. With experience, they may advance to supervisory positions or assist nurses and surgeons in specialized fields. In time, they may help manage operating room facilities.

OPTOMETRIC TECHNICIANS

Army
Navy
Air Force

Optometry, or vision care, is one of the many health benefits available to military personnel. The military operates its own clinics to examine eyes and fit glasses or contact lenses. Optometric technicians assist optometrists in providing vision care. They work with patients and manage clinic offices.



What They Do

Optometric technicians in the military perform some or all of the following duties:

- Perform screening tests of patients' vision and record results
- Order eyeglasses and contact lenses from prescriptions
- Measure patients for eyeglass frames
- Fit eyeglasses to patients
- Make minor repairs to glasses
- Place eyedrops and ointment into patients' eyes
- Keep records in optometry offices

Helpful Attributes

Helpful school subjects include algebra, geometry, biology, and related courses. Helpful attributes include:

- Interest in helping people
- Interest in work requiring accuracy and attention to detail
- Ability to communicate effectively

Training Provided

Job training consists of 9 to 13 weeks of classroom instruction, including practice in optometric procedures. Course content typically includes:

- Preparing and fitting glasses and contact lenses
- Vision testing
- Maintenance of optometric instruments

Further training occurs on the job.

Physical Demands

Normal color vision is required for some specialties to use optometric instruments.

Work Environment

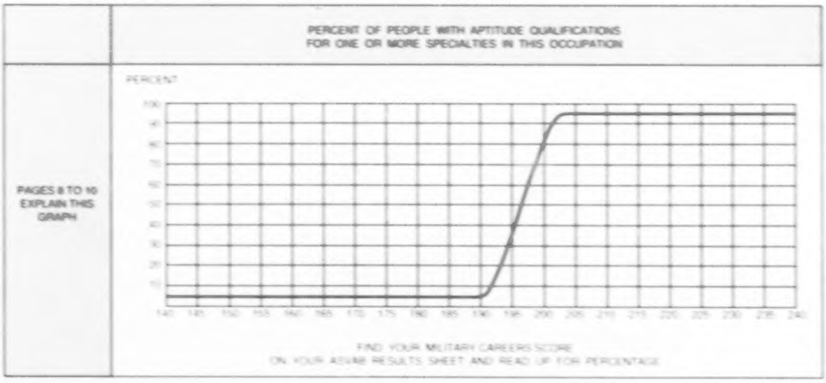
Optometric technicians normally work in optometric clinics.

Civilian Counterparts

Civilian optometric technicians work in private optometry offices, clinics, and government health agencies. They perform duties similar to those performed by military optometric technicians. Optometric technicians are also called optometric assistants.

Opportunities

The services have about 700 optometric technicians. On average, they need 90 new technicians each year. After training, new technicians give simple vision tests under close supervision and perform office duties. As they gain experience, they work with less supervision and perform more difficult tasks. In time, they may help to manage optometric clinics.



PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH

FIND YOUR MILITARY CAREERS SCORE ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

ORTHOPEDIC TECHNICIANS

Army
Navy
Air Force

Orthopedics is a medical specialty for treating patients with broken or injured arms and legs. Orthopedic devices, such as splints and casts, are made to support injured limbs while they heal. Orthopedic technicians assist doctors in treating patients with arm and leg injuries. They make casts, traction devices, and splints according to doctors' instructions.

What They Do

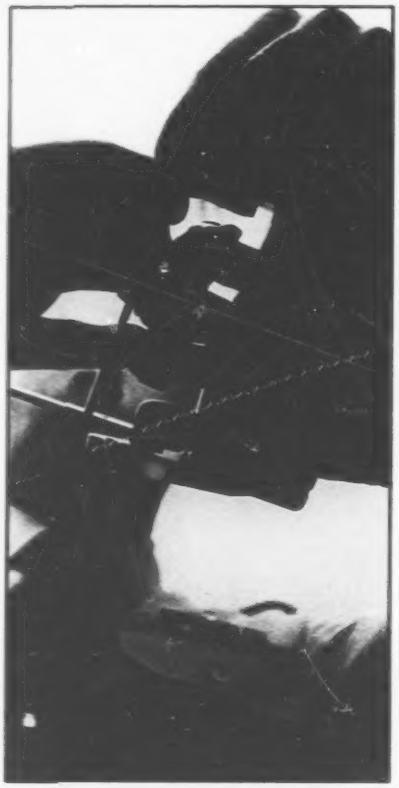
Orthopedic technicians in the military perform some or all of the following duties:

- Make and apply plaster casts for broken arms and legs
- Construct splints for setting broken bones
- Assemble and adjust traction devices
- Prepare patients for orthopedic surgery
- Assist surgeons during surgery
- Remove casts

Helpful Attributes

Helpful school subjects are general science and biology. Helpful attributes include:

- Interest in helping others
- Ability to follow instructions precisely
- Ability to work skillfully with their hands



Physical Demands

Orthopedic technicians may have to lift and support patients for brief periods.

Work Environment

Orthopedic technicians normally work in hospitals and clinics on land or aboard ships. In combat situations, they may work in mobile field hospitals.

Training Provided

Job training consists of 12 weeks of classroom instruction, including practice in making orthopedic devices. Course content typically includes:

- Study of the body and body systems
- Orthopedic terminology
- Plaster casting techniques
- Handling of orthopedic patients

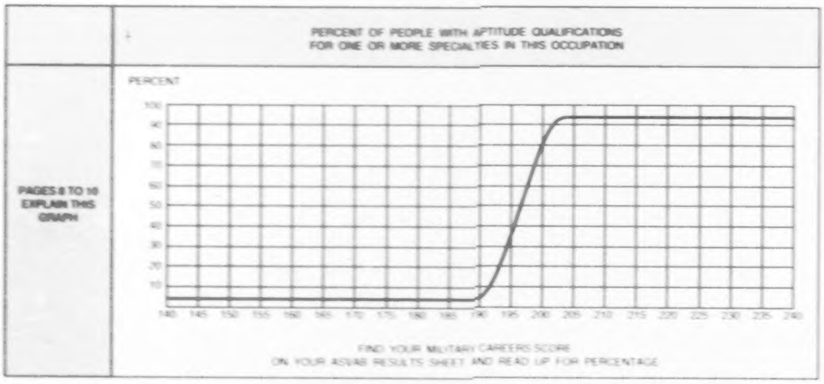
Further training occurs on the job.

Civilian Counterparts

Civilian orthopedic technicians work in hospitals and clinics. Their work is similar to the work of military orthopedic technicians. They are also known as orthopedic physician assistants or orthopedic assistants.

Opportunities

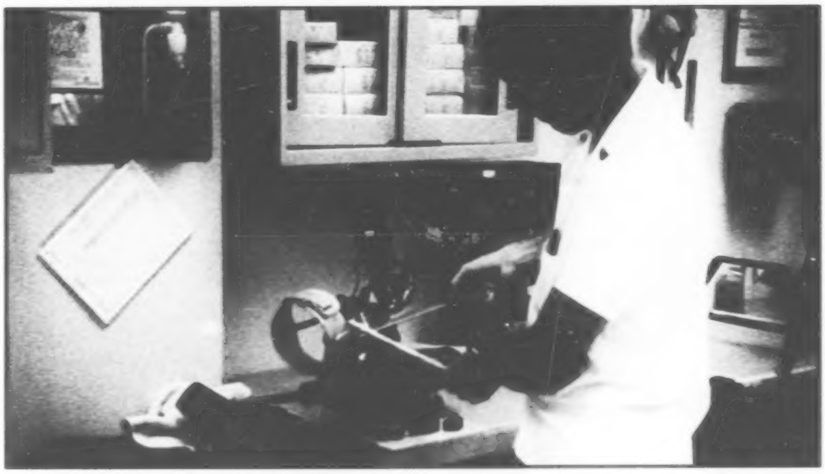
The services have about 600 orthopedic technicians. On average, they need 60 new technicians each year. After job training, new technicians make splints and simple casts under close supervision. In time, they perform more difficult tasks and may supervise others. Eventually, they may help manage health care facilities.



ORTHOTIC SPECIALISTS

Army
Air Force

The military provides medical treatment to personnel disabled by injury or disease. Some disabilities require orthotic devices, which include spinal and limb braces and supports for weakened muscles. These devices must be tailored to each patient. Orthotic specialists make and repair braces and surgical supports for disabled patients. They work as part of medical teams that include physicians and therapists.



What They Do

Orthotic specialists in the military perform some or all of the following duties:

- Design orthotic devices as requested by physicians
- Make plaster casts for injured arms or legs
- Prepare blueprints for parts of braces and supports
- Operate lathes and grinders to make plastic or steel parts
- Adjust devices to fit patients

Helpful Attributes

Helpful school subjects include biology, drafting, and shop mechanics. Helpful attributes include:

- Ability to use hand and power tools
- Interest in work requiring accuracy and attention to detail
- Sensitivity to the needs of others

Training Provided

Job training consists of 50 to 52 weeks of classroom instruction. This includes practice in assembly of orthotic devices. Course content typically includes:

- Basic physiology and anatomy
- Blueprint reading
- Use of welding equipment
- Metal and plastic fabrication
- Construction of special shoes
- Adjustment and repair of braces

Work Environment

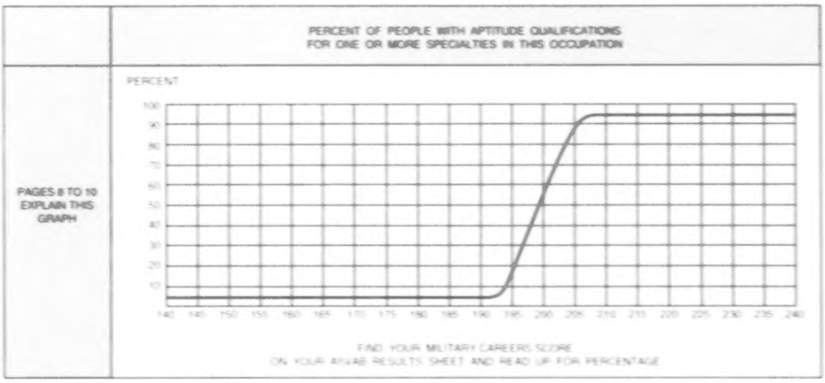
Orthotic specialists work in shops located in or near hospitals and clinics. They wear goggles, gloves, and special clothing when sanding, grinding, and welding.

Civilian Counterparts

Civilian orthotic specialists work in hospitals, rehabilitation centers, or private laboratories. They perform duties similar to those of military orthotic specialists. Civilian orthotic technicians often specialize. Those who fabricate parts using hand and power tools are called orthotic technicians. Those who make casts of body parts and repair or adjust orthotic devices are called orthotic assistants. Those who design orthotic devices and fit them to patients are called orthotists.

Opportunities

The services have about 150 orthotic specialists. On average, they need 20 new specialists each year. After job training, specialists make orthotic devices according to instructions given by supervisors. With experience, specialists are given the responsibility of measuring patients and making plaster casts of body parts. In time, they may become capable of designing and fitting complicated orthotic devices. Eventually, they may supervise orthotics shops.



PHARMACY TECHNICIANS

Army
Navy
Air Force
Coast Guard

Prescription drugs and medicines are important to medical treatment. Patients and physicians depend on military pharmacies to fill their prescriptions accurately. Pharmacy technicians prepare and dispense prescribed drugs and medicines under the supervision of pharmacists or physicians. They also maintain pharmacy supplies and records.

What They Do

Pharmacy technicians in the military perform some or all of the following duties:

- Read doctors' prescriptions to determine the types and amount of drugs to prepare
- Weigh and measure drugs and chemicals
- Mix ingredients in order to produce prescription medications
- Prepare labels for prescriptions
- Dispense medications to patients
- Keep records of drugs prescribed
- Store shipments of drugs and medications

Helpful Attributes

Helpful school subjects include algebra, chemistry, biology, physiology, anatomy, and typing. Helpful attributes include:

- Interest in body chemistry
- Ability to work using precise measurements and standards
- Ability to follow strict procedures and directions

Training Provided

Job training consists of 12 to 17 weeks of classroom instruction. Course content typically includes:

- Pharmacy laws and regulations
- Drug types and uses
- Mixing and dispensing drugs

Physical Demands

Normal color vision is required as is the ability to speak clearly. Some specialties may involve heavy lifting.

Work Environment

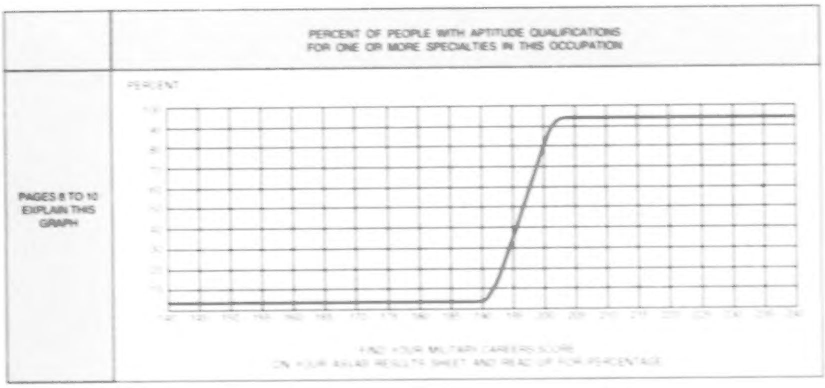
Pharmacy technicians usually work in hospitals and clinics on land or aboard ships. They may also work in field hospitals.

Civilian Counterparts

Civilian pharmacy technicians work in pharmacies, drug stores, hospitals, and clinics under the direction of pharmacists. They are usually known as pharmacy helpers and generally do not have responsibility for the compounding and dispensing of drugs. They perform simple tasks, such as storing supplies, cleaning equipment, and delivering prescriptions. While military pharmacy technicians generally have more job responsibilities than civilian pharmacy helpers, they do not have the qualifications needed to become civilian pharmacists. Pharmacists must complete a college pharmacy degree program, pass a state board exam, and serve in a pharmacy internship.

Opportunities

The services have about 2,400 pharmacy technicians. On average, they need about 300 new technicians each year. After job training, new technicians work under the supervision of experienced pharmacy technicians and pharmacists. With experience, they work more independently. Eventually, they may supervise other technicians and may manage military pharmacies.



PHYSICAL THERAPY SPECIALISTS

Army
Navy
Air Force
Coast Guard

Physical therapy is a program of special treatments and exercises designed to rehabilitate patients disabled by illness or injury. Physical therapy is one of the medical benefits offered to all service personnel. Physical therapy specialists aid physical therapists in helping disabled patients regain strength and mobility.

What They Do

Physical therapy specialists in the military perform some or all of the following duties:

- Assist physical therapists in planning therapy programs for patients
- Give patients massages and heat treatments
- Help patients improve their mobility through special exercises
- Teach patients to use artificial limbs, braces, and other such devices
- Care for therapy equipment such as exercise machines and whirlpools
- Keep records and reports of patients' care and progress

Physical Demands

Physical therapy specialists may have to lift and support patients during exercise and treatment.

Helpful Attributes

Helpful school subjects include biology and physical science. Helpful attributes include:

- Interest in working with people
- Patience in working with people whose injuries heal slowly
- Ability to communicate ideas effectively

Work Environment

Physical therapy specialists work in hospitals, clinics, and rehabilitation centers.

Training Provided

Job training consists of 11 to 28 weeks of classroom instruction, including practice in therapy methods. Training length varies depending on specialty. Course content typically includes:

- Theory and application of therapy procedures
- Handling and positioning of patients
- Principles of rehabilitation

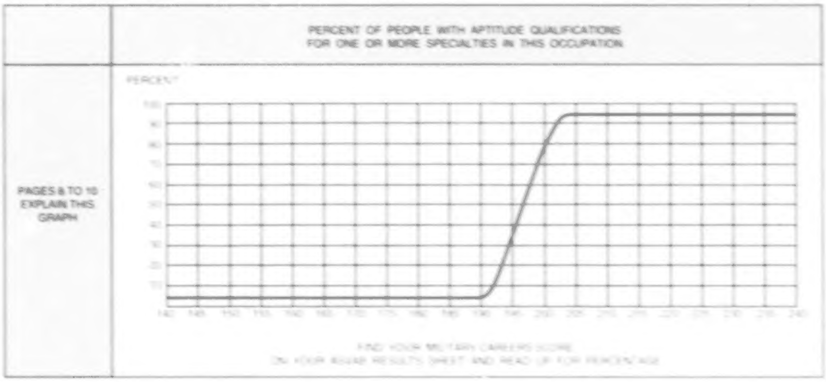
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian physical therapy specialists work for hospitals, nursing homes, and rehabilitation clinics. They perform duties similar to military physical therapy specialists. Civilian physical therapy specialists usually specialize in the types of patients they work with, such as children, the severely disabled, or the elderly.

Opportunities

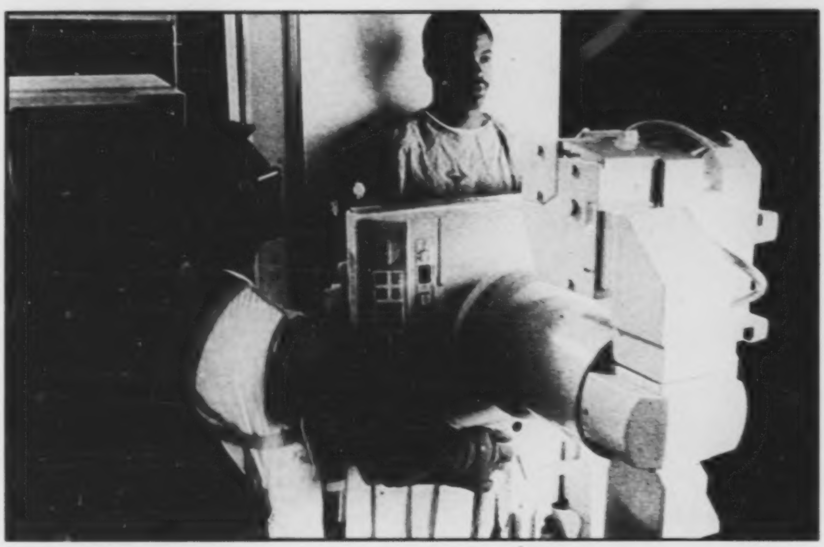
The services have about 700 physical therapy specialists. On average, they need about 90 new specialists each year. After job training, physical therapy specialists work under the direction of physical therapists or more experienced specialists. Physical therapy specialists may advance to supervisory positions, where they plan physical therapy programs and manage clinics.



RADIOLOGIC (X-RAY) TECHNICIANS

Army
Navy
Air Force
Coast Guard

Radiology (the use of X-rays) is a health care service provided to men and women in the military. X-ray photographs help doctors detect injuries and illnesses. Radiology is also used to treat some diseases, such as cancer. Radiologic technicians operate X-ray and related equipment used in diagnosing and treating injuries and diseases. They work as part of a medical team of doctors and specialists to provide health care to patients. Turn to page 398 for more information about radiologic technicians.



What They Do

Radiologic technicians in the military perform some or all of the following duties:

- Read requests or instructions from doctors to determine each patient's X-ray needs
- Position patients under radiologic equipment
- Adjust X-ray equipment to the correct time and power of exposure
- Process X-ray pictures
- Prepare and administer radioactive solutions to patients
- Keep records of patient treatment

Work Environment

Radiologic technicians work in hospitals and clinics. In combat situations, they may work in mobile field hospitals. They follow strict safety procedures to minimize exposure to radiation.

Training Provided

Job training consists of 12 to 19 weeks of classroom instruction, including practice with radiologic equipment. Extensive on-the-job training is also provided. Training length varies depending on specialty. Course content typically includes:

- Operation of X-ray equipment
- Radioactive isotope therapy
- X-ray film processing
- Anatomy and physiology

Additional training occurs through advanced courses.

Helpful Attributes

Helpful school subjects include algebra, biology, and other science courses. Helpful attributes include:

- Interest in activities requiring accuracy and attention to detail
- Ability to follow strict standards and procedures
- Interest in helping others

Civilian Counterparts

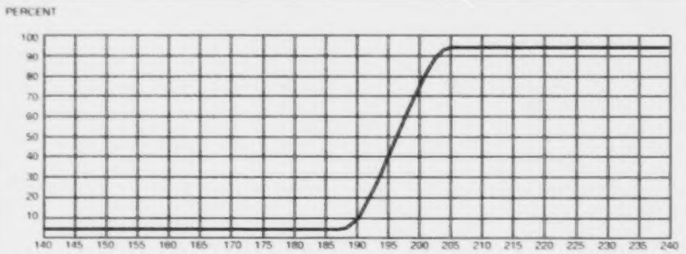
Civilian radiologic technicians work in hospitals, diagnostic clinics, and medical laboratories. They perform duties similar to military radiologic technicians. They may specialize in various areas of radiology and may be called X-ray technologists or nuclear medical technologists.

Opportunities

The military has about 3,100 radiologic technicians. On average, the services need about 300 new technicians each year. After job training, technicians start taking routine X-rays. With experience, they may specialize in nuclear medicine and administer radiation and radioisotopic treatment and therapy. In time, they may advance to become supervisors of radiologic units.

PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS
FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH



FIND YOUR MILITARY CAREERS SCORE
ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

RESPIRATORY THERAPISTS

Army
Navy
Air Force

Asthma and emphysema (lung disease) patients suffer from breathing difficulties. Victims of heart failure, stroke, or near drowning may also have long-term breathing problems. Respiratory therapy is provided to patients with breathing problems. Respiratory therapists help patients regain breathing functions through therapy, exercise, and medication.

What They Do

Respiratory therapists in the military perform some or all of the following duties:

- Assist in reviving patients who are no longer breathing or whose hearts have stopped
- Operate and monitor respiratory therapy equipment during treatment
- Observe and record patients' responses to respiratory therapy
- Clean, sterilize, and maintain respiratory therapy equipment
- Instruct patients in breathing exercises to help clear lungs of fluids
- Instruct patients on how to operate home respiratory therapy equipment

Physical Demands

Respiratory therapists may have to lift and position patients for treatment.

Helpful Attributes

Helpful school subjects include general science, chemistry, and biology. Helpful attributes include:

- Ability to deal with stressful situations
- Ability to respond quickly to emergencies
- Interest in helping others

Work Environment

Respiratory therapists usually work in hospitals or clinics. In combat situations, they may work in mobile field hospitals.

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Training Provided

Job training consists of 32 to 41 weeks of classroom instruction, including practice in providing respiratory therapy. Course content typically includes:

- Procedures for operating respiratory therapy equipment
- Methods for providing emergency care
- Techniques of respiratory therapy

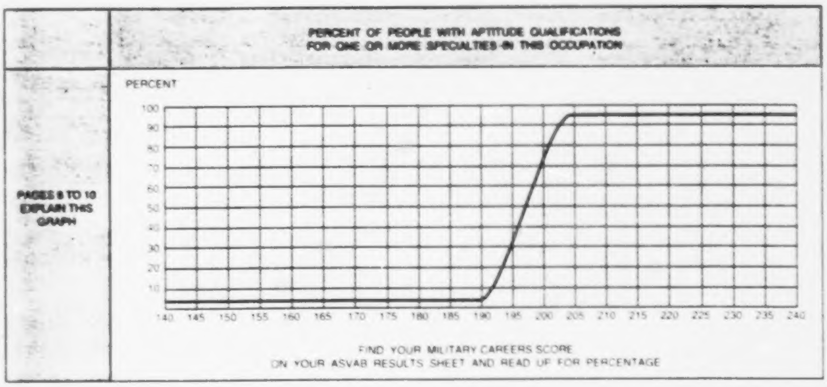
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian respiratory therapists work in hospitals and clinics and for ambulance services. Their duties are similar to those of military respiratory therapists. Civilian respiratory therapists may be called inhalation therapists or pulmonary therapists.

Opportunities

The military has about 450 respiratory therapists. On average, the services need about 30 new therapists each year. After job training, therapists provide treatment under the direction of a supervisor. With experience, they advance from caring for patients with minor respiratory problems to caring for patients with more serious problems. They may also supervise and direct the work of other respiratory therapists.



Engineering, Science, and Technical Occupations

- Air Traffic Controllers
- Broadcast and Recording Technicians
- Computer Programmers
- Computer Systems Analysts
- Drafters
- Emergency Management Specialists
- Environmental Health Specialists
- Fuel and Chemical Laboratory Technicians
- Intelligence Specialists
- Legal Technicians
- Non-Destructive Testers
- Radar and Sonar Operators
- Radio Intelligence Operators
- Radio Operators
- Space Systems Specialists
- Surveying and Mapping Technicians
- Weather Observers

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AIR TRAFFIC CONTROLLERS

Army
Navy
Air Force
Marine Corps

Every day, hundreds of military airplanes and helicopters take off and land all over the world. Their movements are closely controlled in order to prevent accidents. Air traffic controllers direct the movement of aircraft into and out of military airfields. They track aircraft by radar and give voice instructions by radio. Turn to page 360 for more information about air traffic controllers.

What They Do

Air traffic controllers in the military perform some or all of the following duties:

- Operate radio equipment to issue take-off, flight, and landing instructions to pilots
- Relay weather reports, airfield conditions, and safety information to pilots
- Use radar equipment to track aircraft in flight
- Plot airplane locations on charts and maps
- Compute speed, direction, and altitude of aircraft
- Maintain air traffic control records and communication logs

Physical Demands

Normal color vision, normal hearing and a clear speaking voice are required to enter this occupation. Controllers must pass a special physical exam.

Helpful Attributes

Helpful school subjects include English, general mathematics, and typing. Helpful attributes include:

- Ability to work under stress
- Skill in math computation
- Ability to make quick, decisive judgments
- Ability to remain alert while performing repetitive tasks

Special Requirements

Certification by the Federal Aviation Administration (FAA) normally must be obtained during training.

Work Environment

Air traffic controllers work in land-based and shipboard control centers.

Training Provided

Job training consists of 7 to 13 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Air traffic control fundamentals
- Visual and instrument flight procedures
- Radar and other landing approach procedures
- Communication procedures

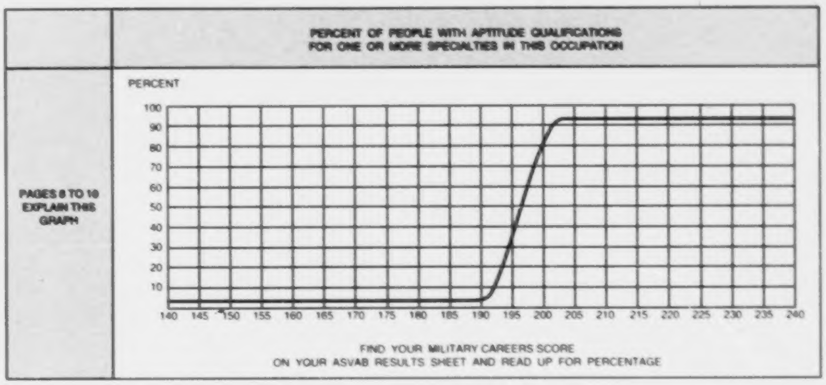
Additional training occurs on the job. Aircraft carrier air traffic controllers receive specialized training.

Civilian Counterparts

Civilian air traffic controllers work for the FAA in airports and control centers around the country. They perform duties similar to military air traffic controllers. They may specialize in specific areas, such as aircraft arrivals, departures, ground control, or en route flights.

Opportunities

The services have about 10,800 air traffic controllers. On average, they need 1,100 new controllers each year. After job training, new controllers normally perform duties such as ground control or work in airfields with light air traffic. With experience, they perform more difficult controller duties. In time, they may become supervisors of other controllers.



BROADCAST AND RECORDING TECHNICIANS

Army
Air Force
Marine Corps

Every day, the military produces radio and television programs for broadcast within the U.S. and overseas. The services also produce films for training and publicity. Audio (sound) equipment is used to record live programs and create lifelike soundtracks for productions. Broadcast and recording technicians operate audio recording devices and broadcast equipment.

What They Do

Broadcast and recording technicians in the military perform some or all of the following duties:

- Set up and adjust microphones and tape recorders
- Monitor the level and quality of sound during broadcasts
- Record sound effects and background music for film, radio, and television
- Operate sound mixing boards to control the sound levels from several microphones
- Set up and operate public address systems

Helpful Attributes

Helpful school subjects include audio-visual communications, drama, speech, and photography. Helpful attributes include:

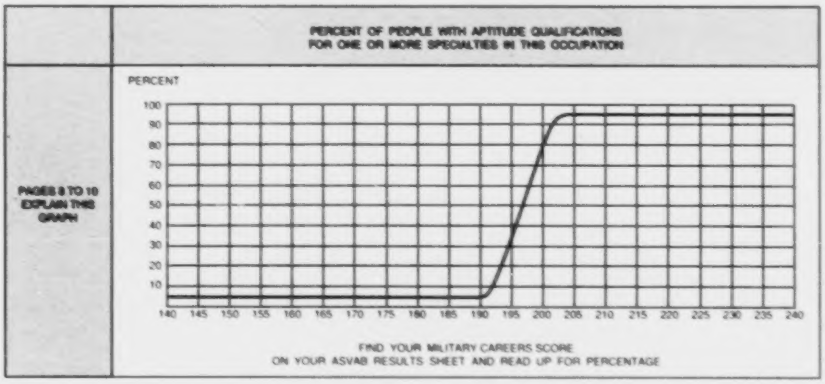
- Interest in working with audiovisual equipment
- Ability to work well as a member of a team

Training Provided

Job training consists of 9 to 52 weeks of instruction, including practice in operating audio equipment. Training length varies depending on specialty. Course content typically includes:

- Techniques for recording motion pictures
- Radio and television broadcasting
- Maintenance of public address sound equipment

Further training occurs on the job and through advanced courses. The Army and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.



Work Environment

Broadcast and recording technicians work indoors, in recording and broadcasting studios, and outdoors when recording or broadcasting in the field.

Civilian Counterparts

Civilian broadcast and recording technicians work for television and radio studios, motion picture studios, and other media centers. Their work is similar to work in the military. Civilian technicians tend to specialize in particular fields, such as radio, television, motion pictures, or advertising. They may be called sound mixers, recording engineers, or sound cutters.

Opportunities

The services have about 1,000 broadcast and recording technicians. On average, they need about 80 new technicians each year. After job training, new technicians operate broadcasting and recording equipment under close supervision. With experience, they work more independently and, in time, may direct audiovisual productions.

COMPUTER PROGRAMMERS

Army
Navy
Air Force
Marine Corps

The military is one of the largest users of data processing equipment in the world. Information about communications, personnel, finance, and supply is kept in its many high-speed computers. This information is important for planning and management. Computer programmers plan and prepare instructions, called programs, that command computers to solve problems and organize data. Turn to page 372 for more information about computer programmers.

What They Do

Computer programmers in the military perform some or all of the following duties:

- Organize and arrange computer programs into logical steps which direct computers to solve problems
- Draw diagrams and charts illustrating the steps in programs
- Code programs into languages that computers can read, such as COBOL, FORTRAN, or BASIC
- Test or debug computer programs to see that the desired information is produced
- Prepare detailed instruction sheets for computer operators who run programs
- Review and update old programs as new information is received or changes are needed

Training Provided

Job training consists of 10 to 13 weeks of classroom instruction, including practice in program coding. Course content typically includes:

- Program structuring, coding, and debugging
- Analysis and design of computer systems
- Preparation of block diagrams, flow charts, and program codes
- FORTRAN, COBOL, and other computer languages

Further training occurs on the job and through advanced courses in specific computer systems and languages. The Army offers a certified apprenticeship program for one specialty in this occupation.

Helpful Attributes

Helpful school subjects include math, business administration, and computer science. Helpful attributes include:

- Ability to understand math concepts
- Interest in solving problems using rules of logic
- Interest in computers

Civilian Counterparts

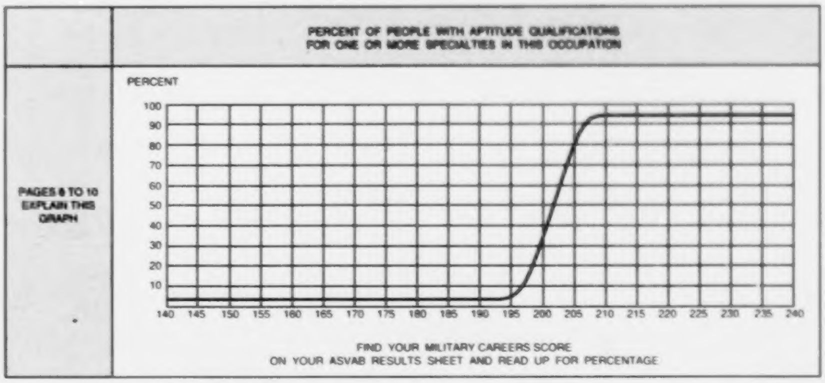
Civilian computer programmers work for such organizations as manufacturing firms, banks, data processing organizations, government agencies, and insurance companies. These employers handle large amounts of information that programmers help organize for convenient use. Civilian computer programmers perform duties similar to those in the military.

Work Environment

Computer programmers normally work in office settings. Some work aboard ships, in missile facilities, or in space command centers.

Opportunities

The military has about 4,300 computer programmers. On average, the services need about 400 new programmers each year. After job training, programmers are assigned to data processing units. Programmers may work alone or with systems analysts and computer operators. With experience, programmers may advance to supervisory positions, such as programming chiefs. Some programmers become computer systems analysts after several years of programming experience and further training.



COMPUTER SYSTEMS ANALYSTS

Army
Navy
Air Force
Marine Corps

Setting up large computer systems requires careful planning. Decisions must be made concerning what information will go into the computer, how it will be processed, and, most importantly, what the system will produce. Computer systems analysts plan and design systems. They also design software programs that permit information to be entered into the computer, stored, processed, and retrieved in a way that meets the military's needs.

What They Do

Computer systems analysts in the military perform some or all of the following duties:

- Help military units determine their data processing needs
- Develop systems plans, including input, output, and processing steps, and information storage and access methods
- Develop flow charts, documentation, and block diagrams of systems for use by programmers
- Help programmers program, test, and debug computer software
- Make systems secure from unofficial access

Work Environment

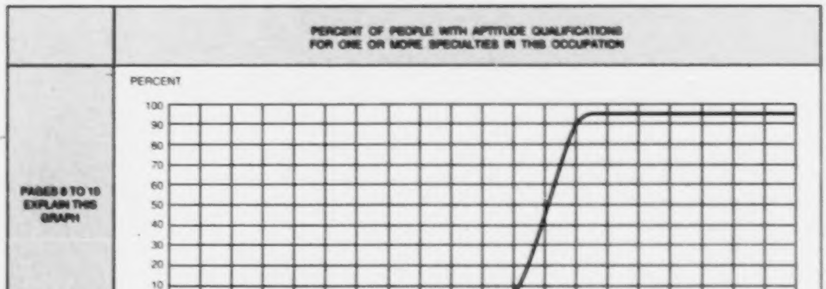
Computer systems analysts usually work in offices.

Training Provided

Job training consists of 10 to 18 weeks of instruction. Training length depends upon specialty. Course content typically includes:

- Planning and designing data processing systems
- Methods of flow charting and documenting systems
- Systems testing and evaluation

Additional training occurs on the job and through advanced courses.



Helpful Attributes

Helpful school subjects include geometry, algebra, and computer science. Helpful attributes include:

- Ability to solve abstract problems
- Ability to communicate effectively
- Preference for work requiring attention to detail

Civilian Counterparts

Civilians in this field work for a wide variety of employers, such as banks, insurance companies, hospitals, large retailers, research firms, manufacturers, and government agencies. Their work is similar to work in the military. They are called programmer/analysts, systems analysts, and systems programmers. Most civilian computer systems analyst jobs require a 4-year college degree.

Opportunities

The services have about 1,900 computer systems analysts. On average, they need about 200 new systems analysts each year. After job training, new analysts work under the direction of experienced analysts. They may work alone on individual projects, but usually work with other analysts and programmers as part of a team. With experience, they may become managers of computer facilities.

DRAFTERS

Army
Navy
Air Force
Coast Guard

The military builds and repairs many airstrips, barracks, roads, and other projects each year. Construction crews need plans to identify the locations, designs, and materials to be used during construction. Drafters prepare detailed plans and drawings for construction projects.

What They Do

Drafters in the military perform some or all of the following duties:

- Make scale drawings of roads, airfields, buildings, and other military projects from engineers' instructions and sketches
- Draw diagrams for wiring and plumbing
- Identify concrete, lumber, and other materials needed to construct projects
- Compute the cost of materials
- Work with engineers and construction supervisors to change drawings when needed

Special Requirements

Courses in algebra and geometry are required to enter some specialties in this occupation.

Helpful Attributes

Helpful high school subjects include drafting, algebra, and geometry. Helpful attributes include:

- Interest in working with drafting equipment
- Ability to print and draw neatly
- Ability to convert ideas into drawings

Physical Demands

Normal color vision is required to work with color-coded maps and drawings.

Work Environment

Drafters in the military usually work in office settings. At times, they work outdoors at construction sites.

Training Provided

Job training consists of 10 to 11 weeks of classroom instruction. Course content typically includes:

- Site plan drafting techniques
- Preparation of briefing charts
- Architectural and structural drawing
- Elevation and building details

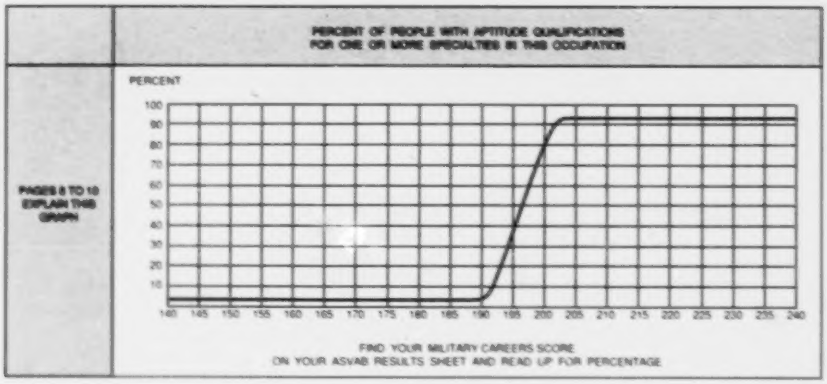
Further training occurs on the job and through advanced courses. The Navy offers certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian drafters usually work for architectural or engineering firms, government agencies, mining firms, and manufacturing industries. Civilian drafters perform duties similar to military drafters. They usually specialize in a particular type of drafting, such as mechanical, electrical, aeronautical, structural, or architectural drafting.

Opportunities

The military has about 1,100 drafters. On average, the services need about 100 new drafters each year. After job training, drafters usually make simple drawings and material estimates under supervision. With experience, they may supervise other drafters and lead planning work on a project. In time, they may become chief drafters or supervisors of construction units.



EMERGENCY MANAGEMENT SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military prepares for emergencies or natural disasters by developing detailed warning, control, and evacuation plans. Emergency management specialists prepare emergency plans and procedures for all types of disasters, such as floods, earthquakes, hurricanes, or enemy attack.

What They Do

Emergency management specialists in the military perform some or all of the following duties:

- Assist in preparing and maintaining disaster operations plans
- Train military and civilian personnel on what to do in an emergency
- Operate and maintain nuclear, biological, and chemical detection and decontamination equipment
- Conduct surveys to determine needs in the event of an emergency
- Monitor disaster preparedness activities and training operations

Helpful Attributes

Helpful school subjects include algebra, chemistry, physics, geometry, and trigonometry. Helpful attributes include:

- Ability to communicate effectively
- Ability to plan and organize
- Ability to work calmly under stress

Work Environment

Emergency management specialists work indoors when conducting training sessions and preparing disaster plans. Sometimes they work outdoors while operating decontamination equipment and monitoring disaster training.

Physical Demands

Normal color vision is needed to identify chemical agents.

Training Provided

Job training consists of 8 to 10 weeks of classroom instruction, including practice in the use of nuclear, biological, and chemical detection and decontamination equipment. Course content typically includes:

- Defensive procedures for nuclear, biological, and chemical warfare
- Preparation of emergency plans

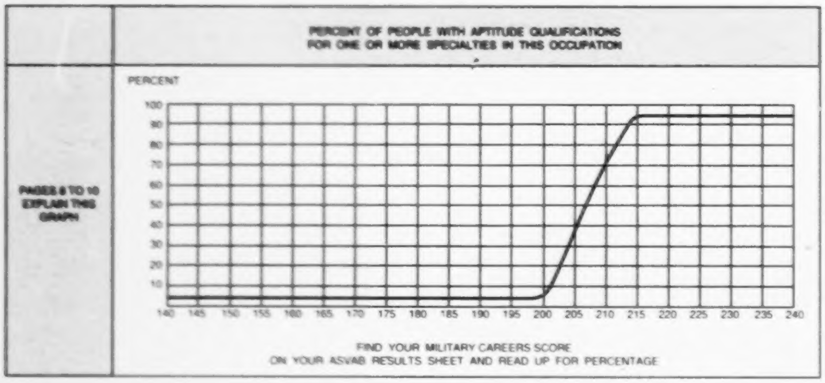
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian emergency management specialists work for federal, state, and local governments, including law enforcement and civil defense agencies. They perform duties similar to military emergency management specialists.

Opportunities

The services have about 11,900 emergency management specialists. On average, they need 1,200 new specialists each year. After job training, some prepare emergency plans under close supervision. With experience, they work more independently and assist in surveys and inspections. Other specialists conduct inspections and operate decontamination equipment. Eventually, they may become supervisors of emergency management programs.



ENVIRONMENTAL HEALTH SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Each military base is a small community. The health and well-being of the residents is a major concern of the services. Keeping military work places and living areas sanitary helps to prevent illness. Environmental health specialists inspect military facilities and food supplies for the presence of disease, germs, or other conditions hazardous to health.

What They Do

Environmental health specialists in the military perform some or all of the following duties:

- Inspect food service, storage, and dining facilities
- Inspect foods for quality and freshness
- Inspect water and waste disposal facilities
- Conduct health and sanitation surveys of living quarters and buildings
- Plan the disposal of radioactive and toxic wastes
- Prepare health inspection reports
- Give hearing exams and monitor noise levels at job sites

Helpful Attributes

Helpful school subjects include algebra, biology, chemistry, and general science. Helpful attributes include:

- Interest in gathering information
- Preference for work requiring attention to detail
- Interest in protecting the environment

Work Environment

Environmental health specialists work indoors while inspecting food facilities and buildings. They work outdoors while inspecting waste disposal facilities and field camps.

Physical Demands

Normal color vision is required to inspect foods for quality and freshness.

Special Requirements

Some specialties require a minimum age of 18 to enter this occupation.

Training Provided

Job training consists of 11 to 19 weeks of classroom instruction, including practice in making health and sanitation inspections. Training length varies depending on specialty. Course content typically includes:

- Identification of health hazards
- Inspection of food products and food service operations
- Inspection of wastewater and waste disposal facilities

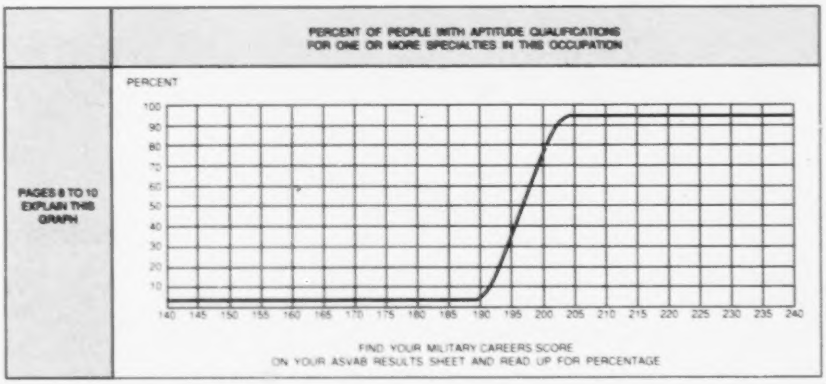
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Most civilian environmental health specialists work for local, state, and federal government agencies. Their duties are similar to the duties of military environmental health specialists. They may be called food and drug inspectors or public health inspectors.

Opportunities

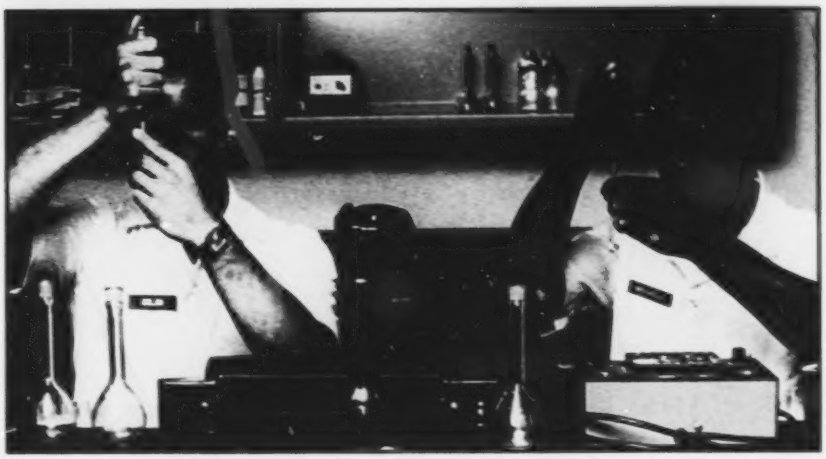
The services have about 4,000 environmental health specialists. On average, they need about 500 new specialists each year. After job training, environmental health specialists help to make inspections. With experience, they work more independently and may supervise other environmental health specialists. Eventually, they may become superintendents of environmental health programs at large military bases.



FUEL AND CHEMICAL LABORATORY TECHNICIANS

Army
Navy
Air Force
Coast Guard

Fuels and oils must be free of water and other contaminants to be safely used in aircraft or vehicles. The same is true for chemicals and other materials used by the military. Fuel and chemical laboratory technicians test fuels, oils, chemicals, and other materials for quality, purity, and durability.



What They Do

Laboratory technicians in the military perform some or all of the following duties:

- Obtain petroleum test samples from storage tanks, barges, and tankers
- Test fuels and oils for water, sediment, and other contaminants using laboratory equipment
- Analyze chemicals for strength, purity, and toxic qualities
- Perform chemical and physical tests on clothing, food, paints, and plastics
- Keep detailed laboratory records and files

Physical Demands

Normal color vision is required to perform chemical tests.

Some specialties may require moderate to heavy lifting.

Work Environment

Fuel and chemical laboratory technicians work in laboratories on military bases and aboard ships.

Training Provided

Job training consists of 2 to 13 weeks of instruction, including practice in testing different products. Training length varies depending on specialty. Course content typically includes:

- Testing methods
- Use of lab equipment, such as centrifuges and spectrometers
- Physical and chemical properties of fuel, oils, and other products

Further training occurs on the job and through advanced courses. The Army and the Navy offer certified apprenticeship programs for one specialty in this occupation.

Helpful Attributes

Helpful school subjects include chemistry and mathematics. Helpful attributes include:

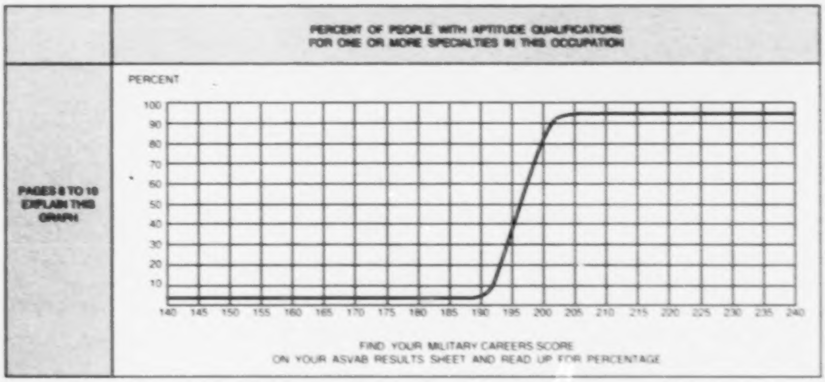
- Interest in performing technical work
- Interest in working with chemicals and lab equipment
- Ability to follow detailed procedures

Civilian Counterparts

Civilian laboratory technicians work for petroleum refineries, chemical companies, manufacturing firms, and government agencies. They perform duties similar to military laboratory technicians. Civilian laboratory technicians specialize in particular industries, such as petroleum, food processing, or medical drugs. They also may be called chemical laboratory technicians or laboratory testers.

Opportunities

The services have about 5,800 fuel and chemical laboratory technicians. On average, they need about 700 new laboratory technicians each year. After job training, laboratory technicians work in testing laboratories under close supervision. With experience, they work more independently and perform more complex analyses. In time, laboratory technicians may supervise or manage test laboratories.



PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH

FIND YOUR MILITARY CAREERS SCORE ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

INTELLIGENCE SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Military intelligence is information needed to plan for our national defense. Knowledge of the number, location, and tactics of enemy forces and potential battle areas is needed to develop military plans. To gather information, the services rely on aerial photographs, electronic monitoring using radar and sensitive radios, and human observation. Intelligence specialists gather and study the information required to design defense plans and tactics.

What They Do

Intelligence specialists in the military perform some or all of the following duties:

- Study aerial photographs of foreign ships, bases, and missile sites
- Study foreign troop movements
- Operate sensitive radios to intercept foreign military communications
- Study land and sea areas that could become battlegrounds in time of war
- Store and retrieve intelligence data using computers
- Study foreign military codes
- Prepare intelligence reports, maps, and charts

Training Provided

Job training consists of 9 to 24 weeks of classroom instruction, including practice in intelligence gathering. Training length varies depending on specialty. Course content typically includes:

- Planning aerial and satellite observations
- Preparing maps and charts
- Analyzing aerial photographs
- Preparing intelligence reports
- Using computer systems

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include typing, algebra, geometry, trigonometry, and geography. Helpful attributes include:

- Interest in reading maps and charts
- Interest in gathering information and studying its meaning
- Ability to organize information
- Ability to think and write clearly

Physical Demands

Normal color vision is required for some specialties in order to work with color coded maps.

Work Environment

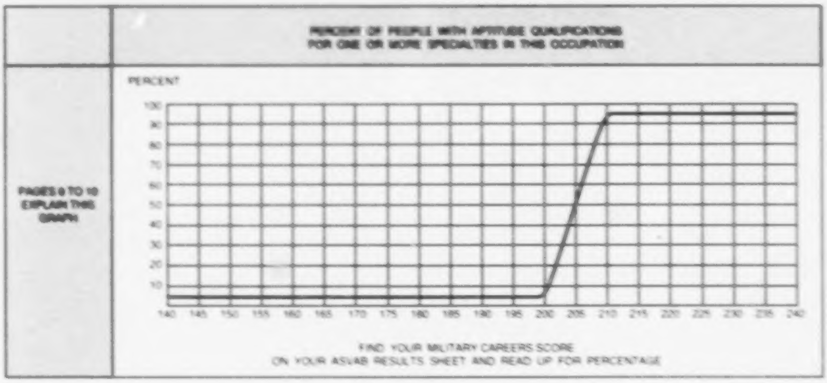
Intelligence specialists work in offices on land and aboard ships, and in tents when in the field.

Civilian Counterparts

Civilian intelligence specialists generally work for federal government agencies such as the Central Intelligence Agency or the National Security Agency. Their duties are similar to those performed by military intelligence specialists. The analytical skills of intelligence specialists are also useful in other fields, such as research or business planning.

Opportunities

The services have about 17,400 intelligence specialists. On average, they need about 1,900 new specialists each year. After job training, intelligence specialists collect information and prepare maps and charts under close supervision. With experience, they are given more responsibility for organizing and studying intelligence data. Eventually, they may become chiefs of intelligence units.



LEGAL TECHNICIANS

Army
Navy
Air Force
Marine Corps

The military has its own judicial system for prosecuting lawbreakers and handling disputes. Legal technicians assist military lawyers and judges in the performance of legal and judicial work. They perform legal research and prepare legal documents needed for military courts.

What They Do

Legal technicians in the military perform some or all of the following duties:

- Research court decisions and military regulations
- Process legal claims, appeals, and summonses to appear in court
- Interview clients and take statements
- Prepare trial requests and make arrangements for courtrooms
- Maintain law libraries and trial case files
- Type claims, trial reports, pretrial agreements, and other legal documents
- Prepare military punishment and discharge orders

Physical Demands

A clear speaking ability is necessary to interview clients.

Special Requirements

Some specialties require the ability to type at a rate of 25–50 words per minute.

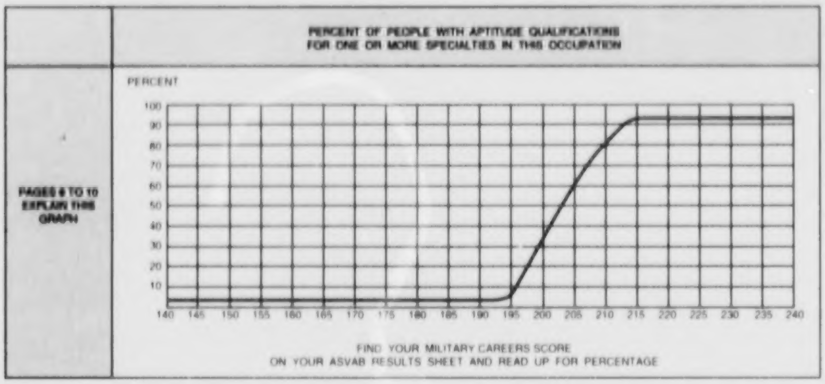
Work Environment

Legal technicians work in military law offices.

Training Provided

Job training consists of 6 to 8 weeks of instruction. Course content typically includes:

- Legal terminology
- Legal research techniques
- How to prepare case files, appeals, and other legal documents
- How to conduct military investigations



Helpful Attributes

Helpful school subjects include business mathematics, typing, speech, and shorthand. Helpful attributes include:

- Interest in office work
- Ability to use library card catalogs
- Interest in the law

Civilian Counterparts

Civilian legal technicians work for private law firms, banks, insurance companies, manufacturing firms, and government agencies. They perform duties similar to military legal technicians. Civilian legal technicians may also be called legal assistants, paralegal assistants, or legal clerks.

Opportunities

The services have about 3,200 legal technicians. On average, they need about 300 new technicians each year. After training, legal technicians are assigned to an attorney, usually called a legal officer or judge advocate. They work under the close supervision of experienced legal technicians. With experience, legal technicians perform more demanding paralegal activities. In time, they may become supervisors of other legal technicians.

NON-DESTRUCTIVE TESTERS

Navy
Air Force

Military equipment is often placed under heavy stress. An airplane's landing gear absorbs heavy runway impact. Submarine hulls withstand tremendous pressure in the ocean depths. In time, stress may cause structural weakening or damage. Non-destructive testers examine metal parts for stress damage. They use X-rays, ultrasonics, and other testing methods that do not damage (are non-destructive to) the parts tested.

What They Do

Non-destructive testers in the military perform some or all of the following duties:

- Inspect metal parts and joints for wear and damage
- Take X-rays of aircraft and ship parts
- Examine X-ray film to detect cracks and flaws in metal parts and welds
- Operate ultrasonic, atomic absorption, and other kinds of test equipment
- Conduct oil analysis and heat damage tests to detect engine wear
- Prepare inspection reports

Training Provided

Job training consists of 9 to 13 weeks of classroom instruction, including practice in testing metal parts. Course content typically includes:

- Methods for inspecting parts and welds
- Operation of X-ray and film processing equipment
- Operation of ultrasonic test equipment
- Preparation of test reports

Helpful Attributes

Helpful school subjects include math and metal shop. Helpful attributes include:

- Thoroughness and dependability
- Interest in operating test equipment
- Interest in machines and how they work

Special Requirements

Applicants must be 18 or older.

Work Environment

Non-destructive testers work indoors in laboratories and aircraft hangars. They also work outdoors in shipyards and in the field.

Civilian Counterparts

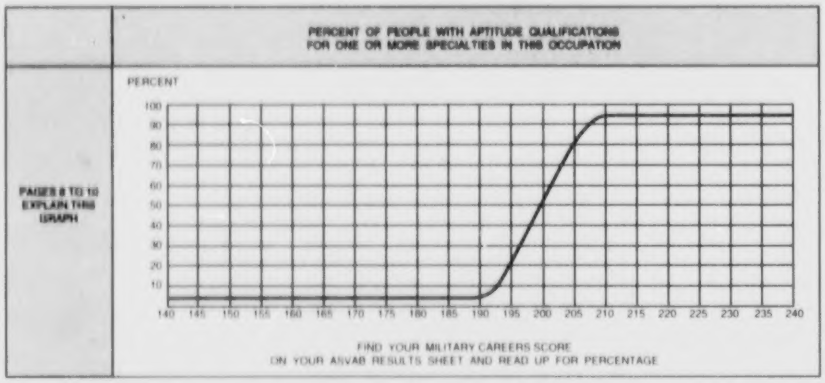
Civilian non-destructive testers work for commercial testing laboratories, airlines, aircraft maintenance companies, and industrial plants. They perform duties similar to military non-destructive testers and may be called radiographers.

Physical Demands

Normal color vision is required to read color-coded diagrams.

Opportunities

The military has about 1,400 non-destructive testers. On average, the services need about 100 new testers each year. After job training, testers are assigned to testing units, where they perform tests under supervision. With experience, they work more independently. In time, non-destructive testers may become supervisors of testing laboratories or maintenance units.



RADAR AND SONAR OPERATORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Radar and sonar devices work by bouncing radio or sound waves off objects to determine their location and measure distance. They have many uses, such as tracking aircraft and missiles, determining positions of ships and submarines, directing artillery fire, forecasting weather, and aiding navigation. Radar and sonar operators monitor sophisticated radar and sonar equipment. They normally specialize in either radar or sonar. Turn to page 394 for more information about radar and sonar operators.

What They Do

Radar and sonar operators in the military perform some or all of the following duties:

- Detect and track position, direction and speed of aircraft, ships, submarines, and missiles
- Plot and record data on status charts and plotting boards
- Set up and operate radar equipment to direct artillery fire
- Monitor early warning air defense systems
- Send and receive messages using radios and electronic communication systems

Work Environment

Radar and sonar operators in the military primarily work indoors in security-controlled areas. They work in operations centers and command posts either on land or aboard aircraft, ships, or submarines. Some may work in a mobile field radar unit.

Helpful Attributes

Helpful school subjects include geometry, algebra, and science. Helpful attributes include:

- Ability to concentrate for long periods
- Interest in working with electronic equipment

Physical Demands

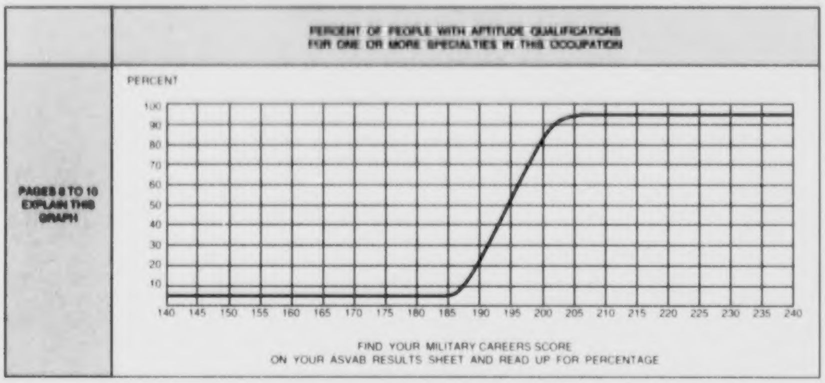
Normal color vision is required to enter this occupation.

Specialties involving flying require passing a special physical exam.

Special Requirements

Although there are women radar and sonar operators, some specialties in this occupation are open only to men.

PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION



FIND YOUR MILITARY CAREERS SCORE ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

Training Provided

Job training consists of 7 to 12 weeks of classroom instruction and practice operating radar or sonar equipment. Training length varies by specialty. Course content typically includes:

- Operation and maintenance of various types of radar and sonar equipment
- Identification of ships, submarines, aircraft, and missiles
- Computation and recording of aircraft or missile speed, direction, and altitude

Further training occurs on the job and through advanced courses.

Civilian Counterparts

There are no direct civilian counterparts to military radar and sonar operators. However, workers in civilian occupations that use radar and sonar equipment in their jobs include weather service technicians, air traffic controllers, ship navigators, and ocean salvage specialists.

Opportunities

The services have about 23,100 radar and sonar operators. On average, they need about 1,600 new operators each year. After job training, new operators operate radar or sonar equipment under close supervision. With experience, they work more independently and may eventually become supervisors of ground, airborne, or shipboard radar or sonar units.

RADIO INTELLIGENCE OPERATORS

Army
Navy
Air Force
Marine Corps

Knowing about the military forces of foreign governments helps our military plan the nation's defense. One way of learning about foreign military forces is to listen to their radio transmissions. Troop locations, battle tactics, and other secrets can be learned from listening to foreign military units sending messages to one another. Radio intelligence operators intercept, identify, and record foreign radio transmissions.

What They Do

Radio intelligence operators in the military perform some or all of the following duties:

- Record radio signals coming from foreign ships, planes, and land forces
- Study radio signals to understand the tactics used by foreign military forces
- Tune radios to certain frequencies and adjust for clear reception
- Locate the source of foreign radio signals using electronic direction-finding equipment
- Translate Morse code signals into words and type them for review by superiors
- Keep logs of signal interceptions

Helpful Attributes

Helpful school subjects include math, speech, typing, and foreign languages. Helpful attributes include:

- Interest in working with radio equipment
- Interest in finding clues that help answer questions
- Ability to remain alert while doing repetitive tasks
- A long attention span

Special Requirements

Although there are women radio intelligence operators, some specialties in this occupation are open only to men.

Work Environment

Radio intelligence operators may work indoors or outdoors, depending on assignment. They may also work in airplanes, ships, and land vehicles.

Physical Demands

Radio intelligence operators may have to sit for long periods and listen to radio transmissions.

Training Provided

Job training consists of 17 to 24 weeks of classroom instruction, including practice in operating radio equipment. Course content typically includes:

- Use of specialized radio receivers
- Security operations
- Morse code

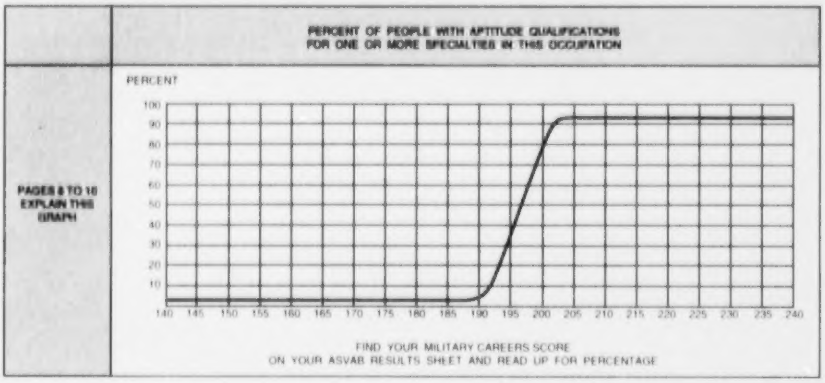
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian radio intelligence operators work for government agencies like the National Security Agency, the Central Intelligence Agency, and the Federal Bureau of Investigation. They also work in related jobs for private electronics and communications companies. They perform duties similar to military radio intelligence operators and may also be called electronic intelligence operations specialists.

Opportunities

The military has about 17,600 radio intelligence operators. On average, the services need about 2,200 new intelligence operators each year. After job training, radio intelligence operators typically perform routine radio monitoring work under close supervision. With experience, they work more independently analyzing radio signals. In time, they may advance to positions of increased responsibility, such as supervising other radio intelligence operators.



RADIO OPERATORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Radios are a vital part of the military's communication system helping to link together air, sea, and ground forces. Radio operators transmit and receive messages using radio equipment.

What They Do

Radio operators in the military perform some or all of the following duties:

- Transmit, receive, and log radio messages according to military procedures
- Encode and decode classified messages
- Set up and tune field radio equipment
- Monitor emergency frequencies for distress calls
- Maintain radio and teletype equipment

Helpful Attributes

Helpful school subjects include typing, English, and speech. Helpful attributes include:

- Interest in working with radio equipment
- Interest in understanding secret codes

Work Environment

Radio operators may work either indoors or outdoors, depending on their assignment. They may be assigned to ships, aircraft, land bases, or mobile field units.

Physical Demands

Normal color vision, normal hearing, and the ability to speak clearly and distinctly are required to enter this occupation.

Training Provided

Job training consists of 10 to 15 weeks of classroom instruction, including practice in operating radio equipment. Course content typically includes:

- Use of various types of radio and teletype equipment
- Procedures for setting up field radio equipment
- Maintenance and care of radio and teletype equipment

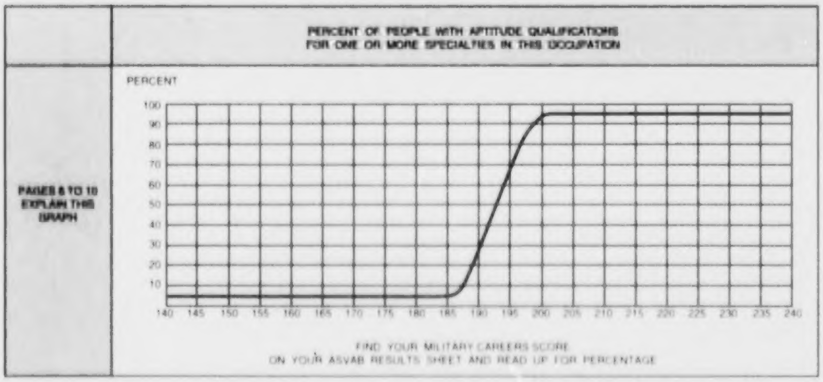
Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian radio operators work in airports, harbors, police stations, fire stations, and aboard ships. Their duties are similar to duties assigned to military radio operators, although civilian radio operators do not usually work in field units. They may be called airline radio operators, radio officers, or radiotelephone operators, depending on their specialty.

Opportunities

The military has about 46,000 radio operators. On average, the services need about 5,900 new operators each year. After job training, radio operators prepare and send messages under supervision. With experience, they work more independently. In time, they may become managers of one or more communications stations.



SPACE SYSTEMS SPECIALISTS

Navy
Air Force

Orbiting satellites and other space vehicles are used for communications, weather forecasting, and collecting intelligence data. In the future, more and more military operations will involve space systems. Space systems specialists operate and repair spacecraft ground control command equipment, including electronic systems that track spacecraft location and operation.

What They Do

Space systems specialists in the military perform some or all of the following duties:

- Transmit and verify spacecraft commands using aerospace ground equipment
- Monitor computers and telemetry display systems
- Analyze data to determine spacecraft operational status
- Repair ground and spacecraft communication equipment
- Assist in preparing spacecraft commands to meet mission objectives
- Operate data handling equipment to track spacecraft

Helpful Attributes

Helpful school subjects include physics, geometry, algebra, and trigonometry. Helpful attributes include:

- Interest in operating electronic equipment and systems
- Interest in working as part of a team
- Ability to work with formulas to solve math problems
- Interest in space exploration

Work Environment

Space systems specialists work in space operations centers.

Physical Demands

Normal color vision is required to enter this occupation.

Training Provided

Job training consists of 17 to 30 weeks of classroom instruction, including practice in spacecraft command and control operations. Course content typically includes:

- Operation of electronic transmitting, receiving, and computing equipment
- Analysis of data that indicate spacecraft operational status
- Application of electronic and satellite system principles
- Alignment of ground and spacecraft communication systems
- Space command and control system operational procedures

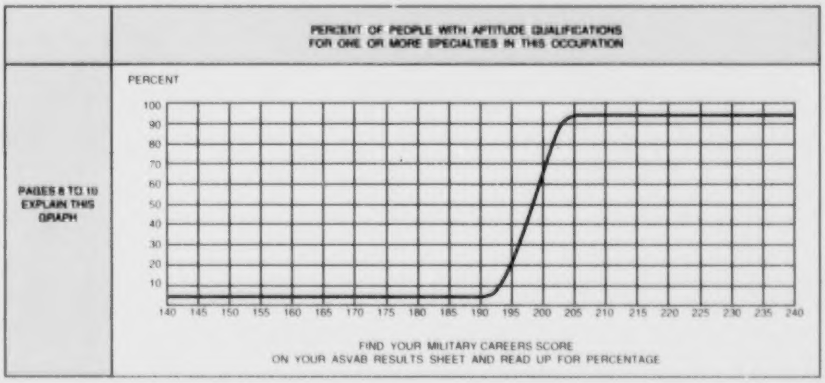
The Navy offers a certified apprenticeship program for one specialty in this occupation.

Civilian Counterparts

Civilian space systems specialists work for the National Aeronautics and Space Administration (NASA), the U.S. Weather Service, and private satellite communications firms. They perform duties similar to military space systems specialists.

Opportunities

The military has about 5,600 space systems specialists. On average, the services need about 450 new specialists each year. After job training, space systems specialists are assigned to space operations centers, where they operate and repair space systems equipment under close supervision. After gaining experience, they work more independently and may help train new workers. Eventually, space systems specialists may advance to become supervisors of space operations centers.



SURVEYING AND MAPPING TECHNICIANS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses surveys and maps to locate military targets and plot troop movements. It also uses surveys and maps to plan construction of airfields, roads, and docks. Surveying and mapping technicians conduct land surveys and make maps showing natural and man-made features such as hills, rivers, roads, and buildings.

What They Do

Surveying and mapping technicians in the military perform some or all of the following duties:

- Draw maps and charts using drafting tools such as easels, templates, and compasses
- Understand and use survey measurements
- Compute survey results using mathematical formulas
- Draw land elevations, distances between points, and locations of landmarks on maps
- Build scale models of land areas out of wood, clay, and paper that show hills, lakes, roads, and buildings
- Piece together aerial photographs of airfields, harbors, and other military sites to form large photomaps

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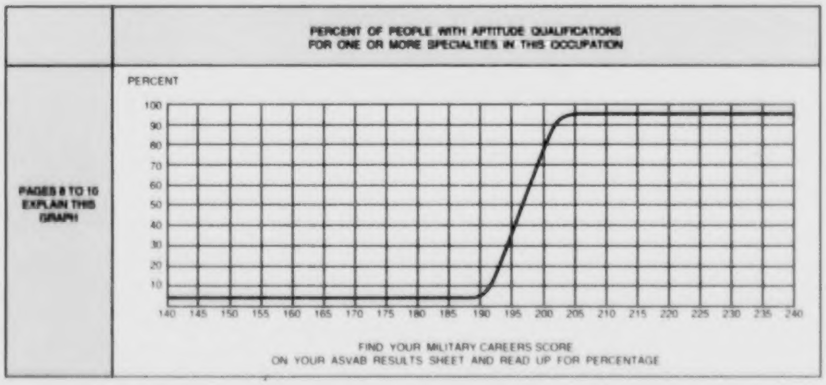
Work Environment

Surveying and mapping technicians work both indoors and outdoors in all climates and weather conditions. Those assigned to engineering units sometimes work outdoors with survey teams. Those assigned to intelligence units may work on ships as well as on land.

Physical Demands

Good depth perception is required to study aerial photos through stereoscopes.



Training Provided

Job training consists of 9 to 31 weeks of classroom instruction, depending on specialty. Course content typically includes:

- Principles of mapmaking
- Ground survey principles
- Use of surveying instruments
- Aerial photo interpretation

Further training occurs on the job and through advanced courses. The Army and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Helpful Attributes

Helpful school subjects include algebra, geometry, and trigonometry. Helpful attributes include:

- Ability to convert ideas into working drawings
- Interest in maps and charts

Civilian Counterparts

Civilian surveying and mapping technicians work for construction, engineering, and architectural firms and government agencies such as the highway department. Their work is used for planning construction projects such as highways, airport runways, dams, and drainage systems. Surveyors and mapmakers are also called cartographers, cartographic technicians, and photogrammetrists.

Opportunities

The military has about 4,500 surveying and mapping technicians. On average, the services need about 550 surveying and mapping technicians each year. After job training, surveying and mapping technicians trace photos, perform basic survey duties, or help make maps under close supervision. With experience, they work more independently. Eventually, they may supervise mapmaking laboratories, intelligence units, or surveying teams.

WEATHER OBSERVERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Weather information is important for planning military operations. Accurate weather forecasts are needed to plan troop movements, airplane flights, and ship traffic. Weather observers collect information about weather and sea conditions for use by meteorologists. They make visual observations and take readings from weather equipment, radar scans, and satellite photographs.

What They Do

Weather observers in the military perform some or all of the following duties:

- Launch weather balloons to record wind speed and direction
- Identify the types of clouds present and estimate cloud height and amount of cloud cover
- Take readings of barometric pressure, temperature, humidity, and sea conditions
- Operate radio equipment to receive information from satellites
- Plot weather information on maps and charts
- Forecast weather based on readings and observations

Training Provided

Job training consists of 7 to 18 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Basic meteorology (study of weather) and oceanography (study of the ocean)
- Methods for plotting weather data
- Analyzing radar and satellite weather information
- Preparation of weather reports

Advanced training in weather forecasting is available for some specialties. The Marine Corps offers a certified apprenticeship program for one specialty in this occupation.

Helpful Attributes

Helpful school subjects include geography, mathematics, and physical science. Helpful attributes include:

- Interest in working with formulas, tables, and graphs
- Ability to communicate effectively
- Interest in learning how weather changes
- Interest in gathering and organizing information

Physical Demands

Normal color vision is required to use color-coded maps and weather charts.

Some specialties may involve heavy lifting.

Work Environment

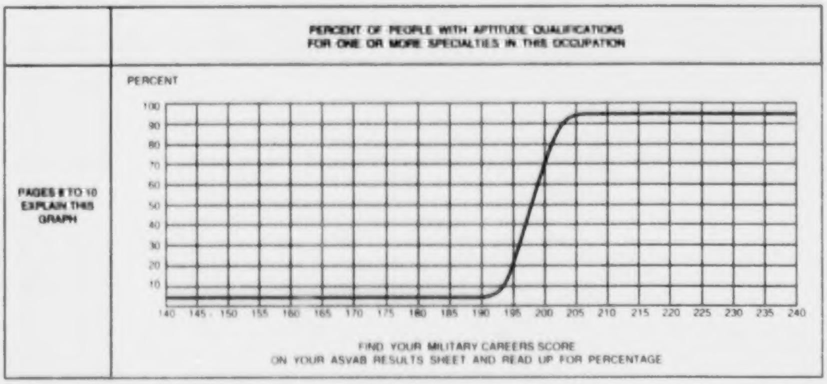
Weather observers usually work in offices either on land or aboard ships. They work outdoors when making visual weather observations and launching weather balloons.

Civilian Counterparts

Civilian weather observers work for government agencies (such as the U.S. Weather Service), commercial airlines, radio and television stations, and private weather forecasting firms. They perform duties similar to military weather observers. Civilian weather observers may also be called oceanographer assistants and weather clerks.

Opportunities

The services have about 6,100 weather observers. On average, they need about 500 new observers each year. After job training, new observers collect weather information under the supervision of experienced workers. With experience, they perform more complex collection and analysis tasks and may become weather forecasters. Eventually, they may become managers of weather observation units.



Administrative Occupations

- Accounting Specialists
- Administrative Support Specialists
- Computer Data Entry Specialists
- Computer Operators
- Court Reporters
- Dispatchers
- Flight Operations Specialists
- Lodging Specialists
- Maintenance Data Analysts
- Payroll Specialists
- Personnel Specialists
- Postal Specialists
- Recruiting Specialists
- Sales and Stock Specialists
- Shipping and Receiving Specialists
- Stock and Inventory Specialists
- Telephone Operators
- Teletype Operators
- Trainers
- Transportation Specialists

BEST COPY AVAILABLE

ACCOUNTING SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Millions of paychecks are issued and large amounts of materials are purchased by the services each year. To account for military spending, exact financial records must be kept of these transactions. Accounting specialists organize and keep track of financial records. They also audit (check the accuracy of) accounting records and develop cost information for budget estimates.

What They Do

Accounting specialists in the military perform some or all of the following duties:

- Record details of financial transactions on accounting forms
- Prepare forms for putting payment information into computers
- Audit financial records
- Prepare bills for payment
- Compute cost information on supplies and equipment
- Organize information on past expenses to help plan budgets for future expenses

Special Qualifications

Depending on the specialty, entry into this occupation may require courses in mathematics, bookkeeping, or accounting.

Helpful Attributes

Helpful school subjects include mathematics, statistics, business machines, bookkeeping, accounting, and typing. Helpful attributes include:

- Ability to work with numbers
- Interest in operating office machines such as computers, calculators, and bookkeeping machines
- Interest in work requiring accuracy and attention to detail

Work Environment

Accounting specialists work in offices on land or aboard ships.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction, including practice in accounting techniques. Course content typically includes:

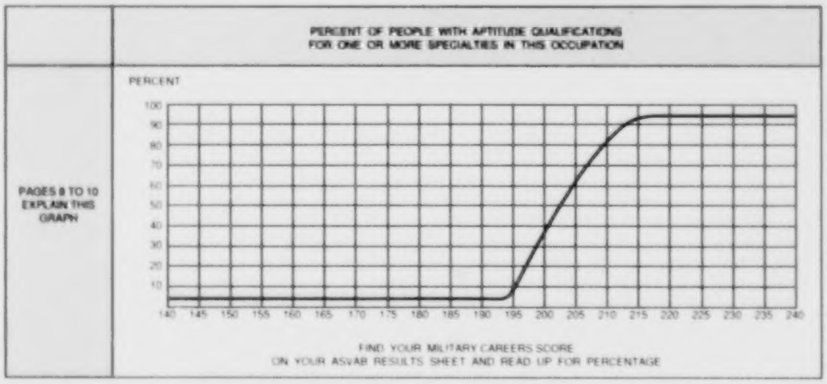
- Accounting principles and procedures
- Statistical analysis to interpret financial data
- Auditing techniques
- Techniques for preparing budgets and financial reports

Civilian Counterparts

Civilian accounting specialists work for all types of businesses and government agencies. They perform duties similar to military accounting specialists. Civilian accounting specialists are also called bookkeepers, accounting clerks, audit clerks, cost clerks, budget clerks, or statistical clerks.

Opportunities

The services have about 7,900 accounting specialists. On average, they need about 500 new specialists each year. After job training, specialists may work alone or with others under the direction of supervisors. With experience, they are given more difficult tasks, such as auditing, and may become responsible for checking the work of others. In time, accounting specialists may become supervisors or managers of accounting units.



ADMINISTRATIVE SUPPORT SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military must keep accurate information for planning and managing its operations. Written and automated records are kept on equipment, funds, personnel, supplies, and all other aspects of the military. Administrative support specialists record information, type reports, and maintain files to assist in the operation of military offices. Turn to page 356 for more information about administrative support specialists.

What They Do

Administrative support specialists in the military perform some or all of the following duties:

- Type letters, reports, requisition (order) forms, and official orders
- Proofread written material for spelling, punctuation, and grammatical errors
- Organize and maintain files and publications
- Order office supplies
- Greet and direct office visitors
- Sort and deliver mail to office workers
- Schedule training and leave for unit personnel
- Answer phones and provide general information
- Take dictation and make notes of meetings using shorthand or stenotype machines

Work Environment

Administrative support specialists work in office settings, both on land and aboard ships.

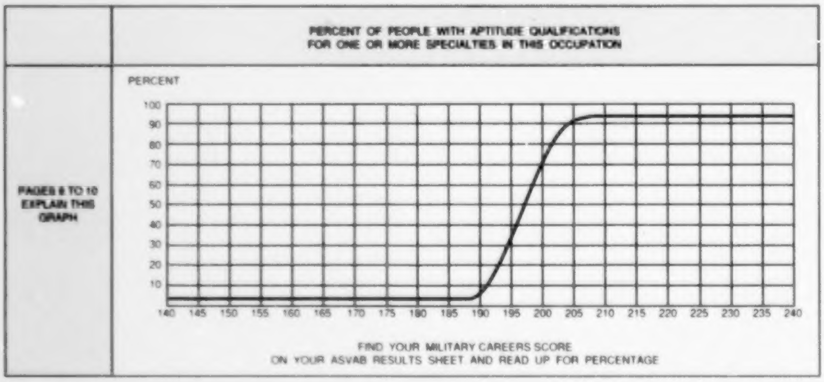
Helpful Attributes

Helpful school subjects include English, math, shorthand, and typing. Helpful attributes include:

- Interest in keeping organized and accurate records
- Preference for office work
- Interest in operating typewriters, word processors, and other office machines
- Ability to organize and plan

Civilian Counterparts

Civilian administrative support specialists work in most business, government, and legal offices. They perform duties similar to military administrative support specialists and are called clerk typists, secretaries, general office clerks, administrative assistants, or office managers.



Training Provided

Job training consists of 6 to 10 weeks of classroom instruction, including practice in various office functions. Course content typically includes:

- English grammar, spelling and punctuation
- Typing and clerical skills
- Setting up and maintaining filing and publication systems
- Preparing forms and correspondence in military style

Further training occurs on the job.

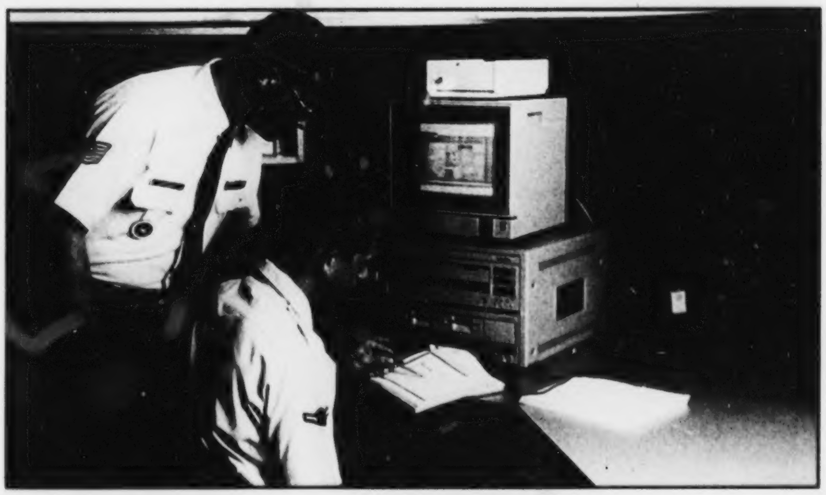
Opportunities

The military has about 47,200 administrative support specialists. On average, the services need about 3,600 new specialists each year. After job training, specialists develop their skills under close supervision. As they gain experience, specialists are assigned more difficult tasks and work more independently. In time, they may supervise and eventually manage an office. With experience and additional training, they may become secretaries, legal technicians, personnel specialists or enter related fields.

COMPUTER DATA ENTRY SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses computers to store and process data on personnel, weather, finances, and many other operations. Before this information can be processed by a computer, it must first be in a form the computer can read. Computer data entry specialists operate keyboard equipment to enter information into computers or onto tape, disk, or punch cards that the computer can read.



What They Do

Computer data entry specialists in the military perform some or all of the following duties:

- Operate keypunch machines to prepare computer punch cards
- Code data onto data processing tape using magnetic tape writers
- Use automatic typewriters to enter data on computer paper tapes
- Key information into disk storage
- Check and correct computer input data using verifying machines
- Prepare tapes and cards for computer input and processing

Helpful Attributes

Helpful school subjects include typing and computer science. Helpful attributes include:

- Interest in work requiring accuracy and attention to detail
- Skill in using electric typewriters
- Preference for work that involves machines more than people

Training Provided

Job training consists of 8 to 13 weeks of classroom instruction, including practice in using data entry machines. Training length varies depending on specialty. Course content typically includes:

- Operation of keypunch, tape writer, and verifier machines
- Data processing security procedures
- Computer systems concepts
- Computer system equipment operation

Work Environment

Computer data entry specialists usually work in office settings. They work in land-based computer centers, mobile combat units, or shipboard computer rooms.

Civilian Counterparts

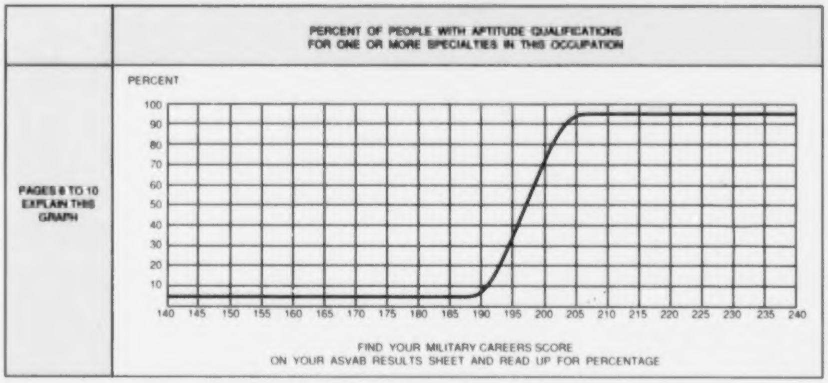
Civilian computer data entry specialists work in every industry that uses computers. They may work for computer manufacturers, government agencies, universities, public utilities, or data processing centers. They perform duties similar to military computer data entry specialists. However, civilian computer data entry specialists usually specialize in operating one specific machine and are called keypunchers, data coders, or verifier machine operators.

Physical Demands

Computer data entry specialists may sit and key information for long periods.

Opportunities

The services have about 4,500 computer data entry specialists. On average, they need about 450 new computer data entry specialists each year. After job training, specialists are assigned to automated data processing sections on land or aboard ship. Initially, they work with other computer data entry specialists under the direction of a supervisor. With experience, they work with less supervision and are given more responsible tasks. Eventually, they have the opportunity to advance to computer data entry supervisor positions. Often, they receive additional training and become computer operators or programmers.



COMPUTER OPERATORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Computer systems include various devices such as tape and disk drives, processing units, printers, communication devices, and control consoles. Computer operators monitor, operate, and control computer system operations.

What They Do

Computer operators in the military perform some or all of the following duties:

- Mount tapes and disks onto drives following programmer instructions
- Operate computers by entering commands through consoles
- Operate and maintain high speed printers
- Monitor operations and locate causes of problems that occur
- Schedule the flow of jobs with programmers
- Operate specialized computers that calculate position, target weapons, and operate machinery

Helpful Attributes

Helpful school subjects include general math and computer science. Helpful attributes include:

- Interest in working with computers
- Ability to follow detailed instructions
- Ability to work quickly and accurately

Training Provided

Job training consists of 7 to 11 weeks of classroom instruction, including practice in computer and peripheral equipment operation. Course content typically includes:

- Introduction to computer systems
- Use of computer consoles and peripheral equipment
- Procedures for ensuring computer security
- Computer system maintenance

Further training occurs on the job and through advanced courses. The Army offers certified apprenticeship programs for some specialties in this occupation.

Work Environment

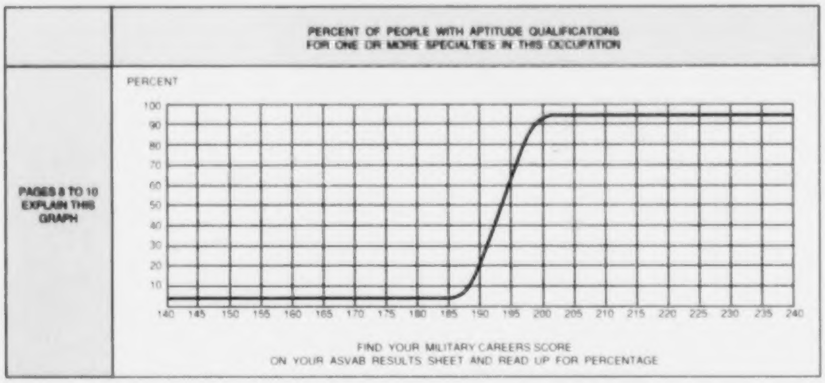
Computer operators work in computer rooms, which may be located aboard ships, in mobile units, or in office buildings.

Civilian Counterparts

Computer operators work for government agencies, computer firms, and all types of businesses. They perform duties similar to military computer operators.

Opportunities

The services have about 14,700 computer operators. On average, they need about 1,400 new operators each year. After job training, operators are usually assigned to data processing centers. Some computer operators are assigned to units such as supply or communications where computer systems are used in daily operations. They work as part of data processing teams under the direction of supervisors. With experience, computer operators work under less supervision. In time, they may advance to supervise computer center operations.



COURT REPORTERS

Navy
Air Force
Marine Corps
Coast Guard

The military has its own judicial system for enforcement of the military code of law. Military courts conduct hearings, investigations, courts of inquiry, and courts-martial. They rule on cases ranging from insubordination (refusing to obey a superior officer's command) to traffic violations on military bases. Court reporters record legal proceedings to maintain an accurate record of testimony and decisions delivered.

What They Do

Court reporters perform some or all of the following duties:

- Type text from stenotyped records, shorthand notes, or taped records of court proceedings
- Prepare records of hearings, investigations, courts-martial, and courts of inquiry
- Prepare legal forms and documents
- Process incoming and outgoing correspondence and maintain legal files
- Maintain the legal calendar, law library, and reference file of pending cases

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Special Requirements

The ability to type 40 words per minute is required to enter some specialties in this occupation.

Helpful Attributes

Helpful school subjects include English, business math, typing, and commercial law. Helpful attributes include:

- A good memory
- Ability to listen carefully
- Ability to keep accurate records
- Interest in legal proceedings

Work Environment

Court reporters work in offices and court rooms.

Training Provided

Job training consists of 6 to 10 weeks of instruction, including the use and operation of stenotype machines. Course content typically includes:

- High speed transcription
- Legal forms and records management
- Military judicial processes

Physical Demands

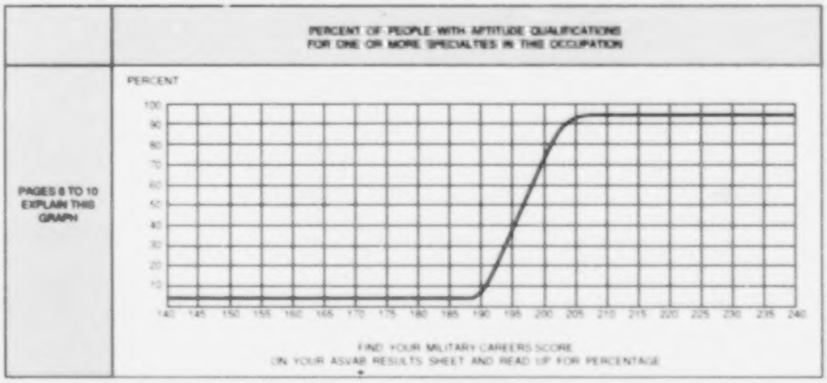
Court reporters are required to have good hearing and clear speech to record and read aloud court proceedings.

Civilian Counterparts

Civilian court reporters often work for government agencies, law firms, or local, state, and federal courts and legislatures. They may be called court clerks or court recorders. They perform duties similar to military court reporters.

Opportunities

The services have about 500 court reporters. On average, they need about 10 new reporters each year. After job training, court reporters are assigned to legal offices, where they work under close supervision. In time, they gain more responsibility and may help train other reporters. Eventually, they may become managers of legal support staff units. Some specialties are entered only after 1 or 2 years of experience as an administrative support specialist.



DISPATCHERS

Army
Navy
Air Force
Marine Corps

Military trucks, buses, and other vehicles carry freight and passengers millions of miles each year. Trips and maintenance are carefully scheduled to make the best use of vehicles and drivers. Dispatchers assign motor vehicles and drivers for the transportation of freight or passengers. They also schedule repair and maintenance of motor vehicles and equipment.

What They Do

Dispatchers in the military perform some or all of the following duties:

- Schedule the use of motor vehicles
- Assign drivers for trucks, buses, and cars
- Determine which vehicles to use based on freight or passenger movement requirements
- Schedule repair and maintenance of vehicles
- Determine transportation routes
- Review requests for using vehicles
- Prepare reports about fuel used, miles driven, and number of vehicles needing repair

Helpful Attributes

Helpful school subjects include general math, driver's education, and auto mechanics. Helpful attributes include:

- Interest in planning and scheduling the work of others
- Preference for working with figures

Physical Demands

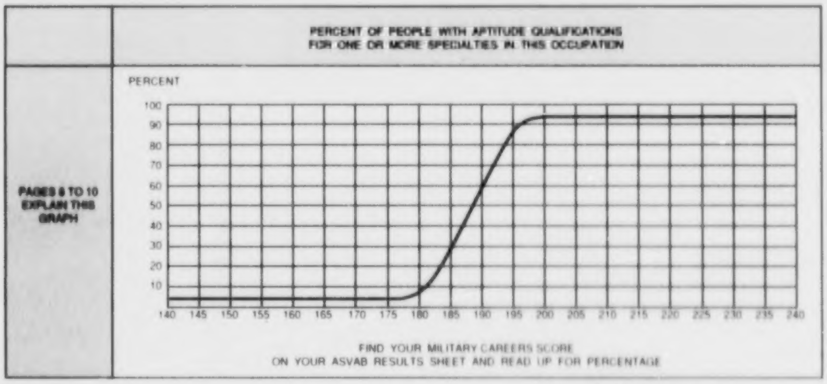
The ability to speak clearly and distinctly is required to enter some specialties in this occupation.

Training Provided

Job training may consist of on-the-job training or classroom instruction, depending on the specialty. Training length varies from 7 to 17 weeks. Course content typically includes:

- Procedures for transporting passengers and freight
- Motor vehicle maintenance scheduling
- Vehicle scheduling procedures

Further training occurs on the job and through advanced courses.



Work Environment

Dispatchers work in the dispatch offices of motor pools and motor transport terminals. Sometimes, they work outdoors while dispatching vehicles during field maneuvers.

Special Requirements

Dispatchers must have a clear speaking voice to communicate over the radio.

Civilian Counterparts

Civilian dispatchers work for bus lines, trucking firms, police departments, auto repair garages, taxi companies, and motor vehicle dealerships. They perform duties similar to military dispatchers. They usually specialize in either dispatching passenger carriers or freight transports.

Opportunities

The services have about 10,800 dispatchers. On average, they need about 1,300 new dispatchers each year. After job training, dispatchers work under close supervision. With experience, they work more independently. In time, they may advance to supervisory positions in the transportation field. In some specialties, recruits may start out as truck drivers before becoming dispatchers.

FLIGHT OPERATIONS SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military operates one of the largest fleets of aircraft in the world. Hundreds of transport, passenger, and combat airplanes and helicopters fly missions every day. Accurate flight information keeps operations safe and efficient. Flight operations specialists prepare and provide flight information for air and ground crews.

What They Do

Flight operations specialists in the military perform some or all of the following duties:

- Help plan flight schedules and air crew assignments
- Keep flight logs on incoming and outgoing flights
- Keep air crew flying records and flight operations records
- Receive and post weather information and flight plan data, such as air routes and arrival and departure times
- Coordinate air crew needs, such as ground transportation
- Plan aircraft equipment needs for air evacuation and dangerous cargo flights
- Check military flight plans with civilian agencies

Helpful Attributes

Helpful school subjects include general math and typing. Helpful attributes include:

- Interest in work involving computers
- Ability to use typewriters and office machines
- Interest in work that helps others
- Ability to keep accurate records

Work Environment

Flight operations specialists work indoors in flight control centers or air terminals.

Physical Demands

The ability to speak clearly and distinctly is required.

Training Provided

Job training consists of 7 to 14 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Introduction to aviation operations
- Procedures for scheduling aircraft and assigning air crews
- Flight planning and airfield operations
- Preparing flight operations reports and records

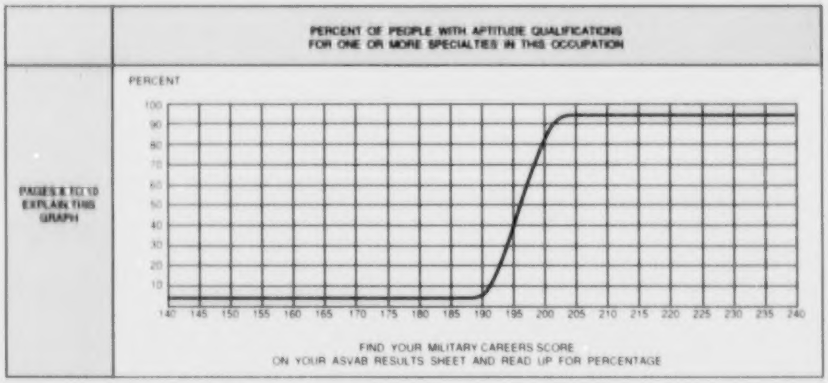
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian flight operations specialists work for commercial and private airlines and air transport companies. They perform duties similar to military flight operations specialists.

Opportunities

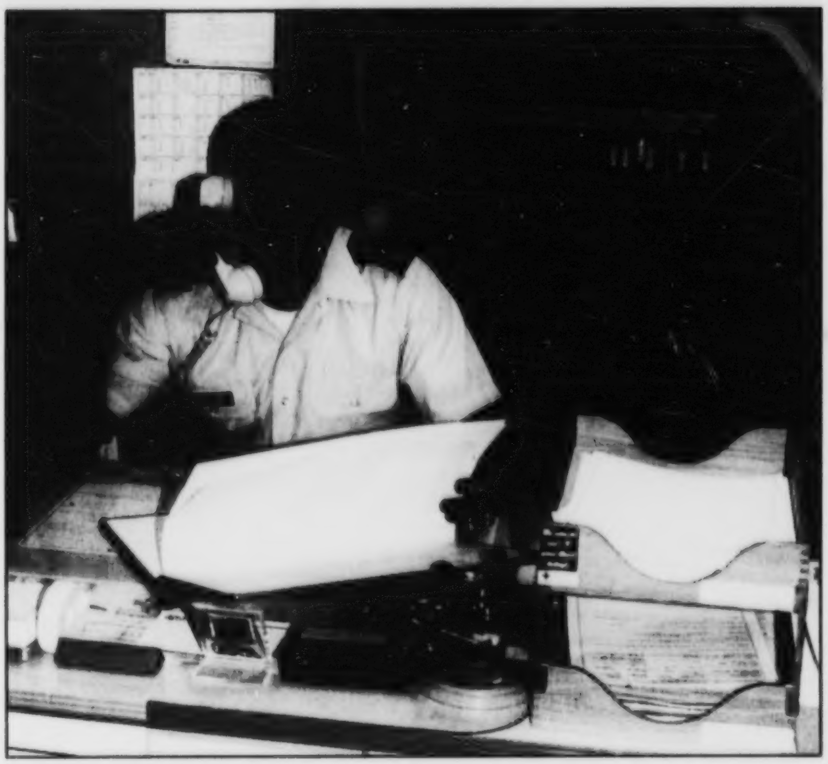
The services have about 6,800 flight operations specialists. On average, they need about 600 new specialists each year. After training, new specialists keep logs and type schedules. With experience, they schedule air crews. In time, they may plan flight operations and supervise others.



LODGING SPECIALISTS

Army
Navy
Air Force
Coast Guard

Military personnel occasionally travel for training and work. When traveling, personnel often stay in temporary lodging on military bases. Lodging specialists operate and manage temporary lodging facilities for military personnel.



What They Do

Lodging specialists in the military perform some or all of the following duties:

- Register personnel and assign them rooms
- Issue courtesy items, such as alarm clocks and towels
- Receive payments and keep financial records
- Operate switchboards to relay calls and provide information to callers
- Keep accurate records on room occupancy
- Arrange hotel accommodations when lodging on base is unavailable

Physical Demands

Lodging specialists must be able to speak clearly in order to communicate with guests.

Helpful Attributes

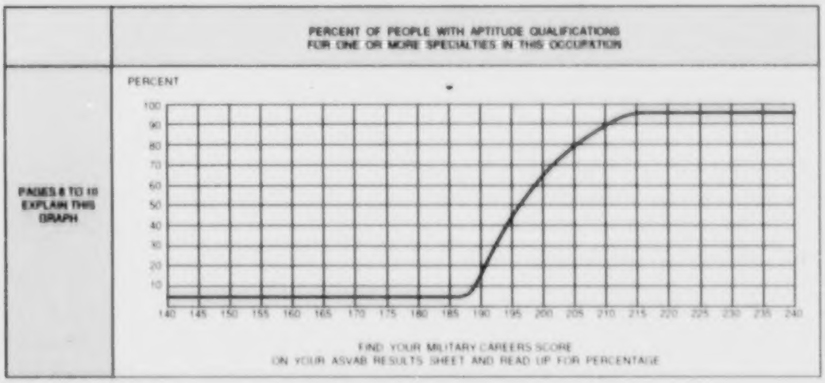
Helpful school subjects include math and bookkeeping. Helpful attributes include:

- Interest in meeting and serving people
- Ability to work independently
- Ability to communicate effectively

Training Provided

Job training may consist of on-the-job training or classroom instruction, depending on the specialty. Course content typically includes:

- Lodging management
- Front desk operations
- Contract quarters management



Work Environment

Lodging specialists usually work in hotel-type facilities located on military bases.

Civilian Counterparts

Civilian lodging specialists work for hotels or motels. They perform many of the same duties as military lodging specialists; however, they may specialize as registration clerks, bookkeepers, cashiers, or telephone operators.

Opportunities

The military has about 14,700 lodging specialists. On average, the services need about 1,300 new specialists each year. After job training, they perform routine duties under the direction of a supervisor. With experience, they are assigned more challenging tasks, such as bookkeeping activities. In time, lodging specialists may supervise others and eventually manage lodging facilities.

MAINTENANCE DATA ANALYSTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Regular maintenance extends the useful lives of aircraft, vehicles, and machinery. To make sure military equipment is well maintained, the services prepare detailed maintenance schedules. Maintenance data analysts promote equipment maintenance. They watch schedules and notify mechanics about upcoming maintenance needs.

What They Do

Maintenance data analysts in the military perform some or all of the following duties:

- Review maintenance schedules and notify mechanics about the types of service needed
- Compare schedules to records of maintenance work actually performed
- Prepare charts and reports on maintenance activities
- Calculate how many mechanics and spare parts are needed to maintain equipment
- Operate computers and calculators to enter or retrieve maintenance data

Physical Demands

Normal color vision is required to read and interpret maintenance charts and graphs in some specialties.

Some specialties require the ability to speak clearly.

Helpful Attributes

Helpful school subjects include general math and algebra. Helpful attributes include:

- Interest in working with numbers and statistics
- Preference for work requiring attention to detail
- Ability to use mathematical formulas
- Interest in working with computers

Work Environment

Maintenance data analysts usually work in office settings.

Training Provided

Job training consists of 4 to 15 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

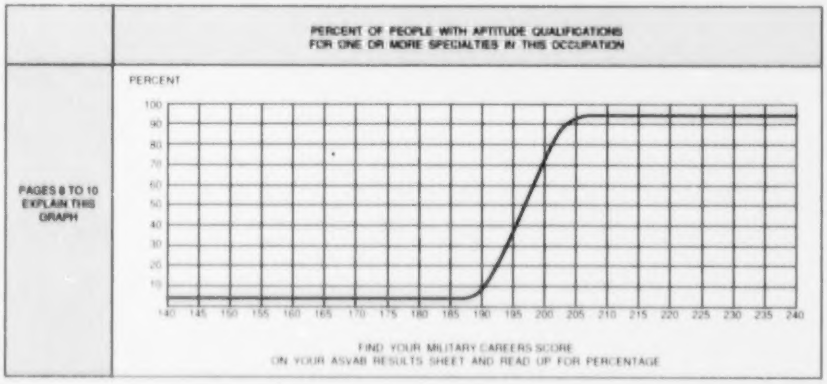
- Equipment maintenance management concepts
- Accounting procedures
- Statistical reporting methods
- Parts and supply inventory control procedures

Civilian Counterparts

Civilian maintenance data analysts work for government agencies, airlines, and large transportation firms. They also work for firms with large numbers of machines. They perform duties similar to military maintenance data analysts.

Opportunities

The services have about 13,700 maintenance data analysts. On average, they need 1,300 new analysts each year. After job training, new analysts work under close supervision. As they gain experience, they are given more responsibility and more difficult work assignments. Eventually, they may become supervisors of maintenance control units.



PAYROLL SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military is the largest employer in the United States. Every month, millions of military and civilian personnel are paid by the services. Payroll specialists compute payrolls and other allowances and prepare payments for military personnel.

What They Do

Payroll specialists in the military perform some or all of the following duties:

- Compute basic pay and allowances, bonuses, and other payments
- Compute social security, income tax, insurance, and other deductions
- Prepare pay and travel vouchers (checks), earnings and deductions statements, and financial accounts and reports
- Compute travel distances and travel pay allowances
- Prepare, maintain, and audit personnel financial records
- Disburse cash, checks, advance travel pay, and bonds

Helpful Attributes

Helpful school subjects include math, accounting, business machines, and typing. Helpful attributes include:

- Interest in working with numbers
- Ability to use typewriters, computers, and calculators
- Preference for work requiring accuracy and attention to detail

Training Provided

Job training consists of between 6 and 8 weeks of classroom instruction. Course content typically includes:

- Preparation and maintenance of financial records
- Office operations and payroll and travel pay procedures
- Operation and use of calculators and other office machines
- Computation of pay and deductions

Work Environment

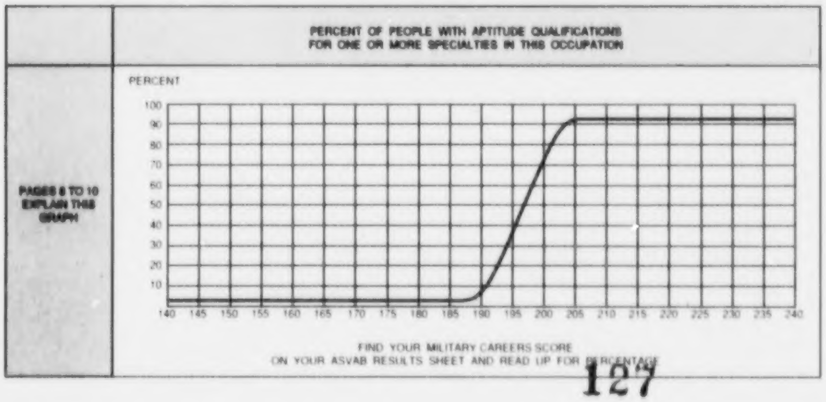
Payroll specialists usually work in office settings on land or aboard ships.

Civilian Counterparts

Civilian payroll specialists work for schools, hospitals, government agencies, and almost every kind of industrial and business firm. They perform duties similar to military payroll specialists and are commonly called payroll clerks.

Opportunities

The military has about 7,700 payroll specialists. On average, the services need about 800 new specialists each year. After job training, specialists work in pay or travel sections and perform routine pay and finance activities. Initially, they work under the close supervision of an experienced payroll specialist. With experience, they work more independently. In time, they help train and supervise other payroll specialists. Eventually, they may become office managers or supervisors of pay and finance centers.



PERSONNEL SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Personnel management helps individuals develop their military careers. It also serves the military's need to fill jobs with qualified workers. Personnel specialists collect and store information about the people in the military, such as training, job assignment, promotion, and health information. They work directly with service personnel and their families. Turn to page 390 for more information about personnel specialists.

What They Do

Personnel specialists in the military perform some or all of the following duties:

- Organize, maintain, and review personnel records
- Enter and retrieve personnel information using computer terminals
- Assign personnel to jobs
- Prepare organizational charts, write official correspondence, and prepare reports
- Provide career guidance
- Assist personnel and their families who have special needs
- Provide information about personnel programs and procedures to service men and women

Training Provided

Job training consists of 7 to 9 weeks of classroom instruction. Course content typically includes:

- Basic typing skills
- Preparation of military correspondence and forms
- Personnel records management
- Computer update and retrieval procedures

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include English, speech, and typing. Helpful attributes include:

- Ability to follow detailed procedures and instructions
- Ability to compose clear instructions or correspondence
- Interest in working closely with others

Work Environment

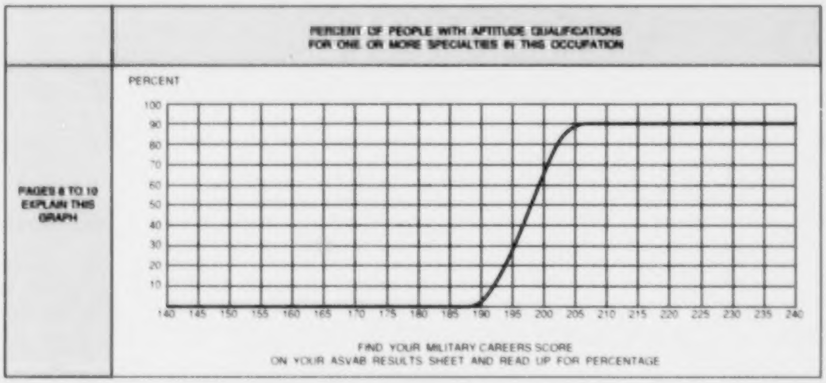
Personnel specialists normally work in office settings on land or aboard ships.

Civilian Counterparts

Civilian personnel specialists work for all types of organizations, including industrial firms, retail establishments, and government agencies. They perform duties similar to military personnel clerks. However, specific jobs vary from company to company.

Opportunities

The services have about 21,200 personnel specialists. On average, they need about 2,000 new specialists each year. After job training, specialists process personnel actions and add information to records. In time, they may supervise other personnel specialists and eventually may manage personnel offices.



POSTAL SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military operates its own postal service for official military communications and messages. In addition, it delivers mail to thousands of service men and women all over the world. Postal specialists process incoming and outgoing mail between military and civilian postal systems. They also sell stamps and money orders and provide services to postal customers.

What They Do

Postal specialists in the military perform some or all of the following duties:

- Process mail using metering and stamp-canceling machines
- Weigh packages, using scales, to determine postage due
- Examine packages to ensure that they meet mailing standards
- Process and sort registered, certified, and insured mail
- Receive payment for and issue money orders and stamps
- Prepare postal reports and claims for lost or damaged mail

Work Environment

Postal specialists work in post offices and mailrooms on land or aboard ships.

Civilian Counterparts

Civilian postal specialists work for the United States Postal Service and for private courier or express mail firms. They perform many of the same duties as military postal specialists. They are usually called postal clerks.

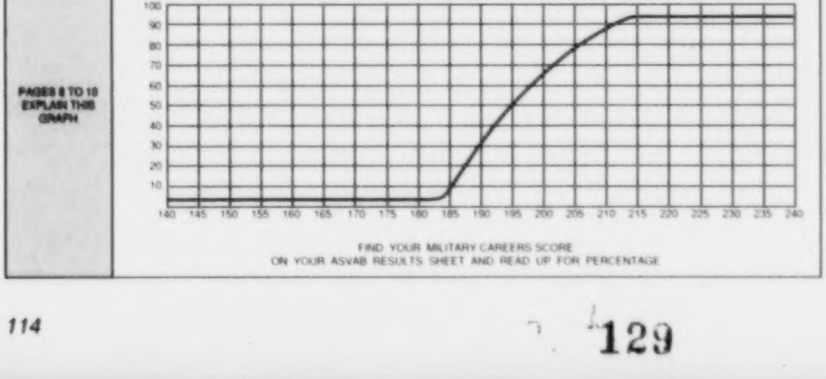
Physical Demands

Postal specialists may have to lift and carry heavy sacks of mail or large packages.

Helpful Attributes

Helpful school subjects include English, math, and typing. Helpful attributes include:

- Courteous manner and patience
- Ability to check names and numbers with speed and accuracy
- Preference for work requiring attention to detail



Training Provided

Job training consists of 3 to 4 weeks of classroom instruction. Course content typically includes:

- Post office operations and procedures
- Mail and postal item processing and sorting
- Domestic and international mail delivery procedures
- Use of metering, stamp canceling, and other machines
- Postal reports and the processing of customer claims and complaints

Further training occurs on the job and through advanced courses.

Opportunities

The military has about 7,700 postal specialists. On average, the services need about 800 new specialists each year. After job training, they work alone in small mail rooms or with other postal specialists in larger postal centers. With experience, they may help train new workers and may become supervisors of other postal specialists. Eventually, they may become superintendents of postal centers.

RECRUITING SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Each year, the military services enlist over 300,000 young men and women. Attracting young people with the kinds of talent needed to succeed in today's military is a large task. Recruiting specialists provide information about military careers to young people, parents, schools, and local communities. They explain service employment and training opportunities, pay and benefits, and service life.

What They Do

Recruiting specialists in the military perform some or all of the following duties:

- Interview civilians interested in military careers
- Describe military careers to groups of high school students
- Explain the purpose of the ASVAB (Armed Services Vocational Aptitude Battery) and test results to students and counselors
- Participate in local job fairs and career day programs
- Talk about the military to community groups
- Counsel military personnel about career opportunities and benefits

Work Environment

Recruiting specialists work in local recruiting offices, on high school campuses and career centers, and in local communities. They may have to travel often.

Training Provided

Job training consists of 4 to 6 weeks of classroom instruction. Course content typically includes:

- Recruiting procedures
- Interviewing techniques
- Public speaking techniques
- Community relations practices

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include the social sciences, speech, psychology, and English. Helpful attributes include:

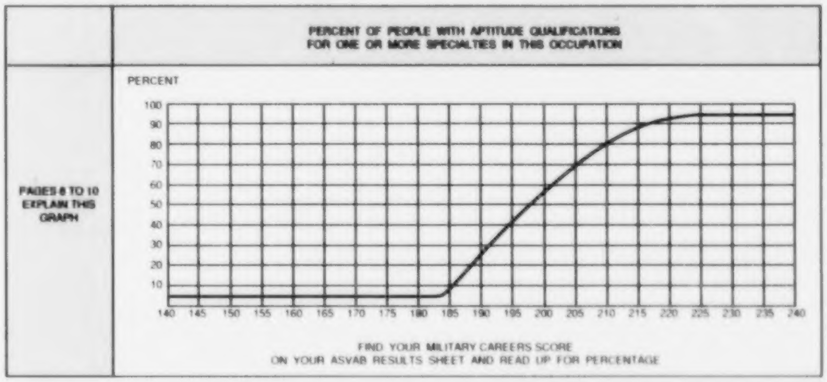
- Interest in working with youths
- Ability to speak before groups
- Ability to work independently

Civilian Counterparts

Civilian recruiting specialists work for businesses of all kinds searching for talented people to hire. Recruiters also work for colleges seeking to attract and enroll talented high school students.

Opportunities

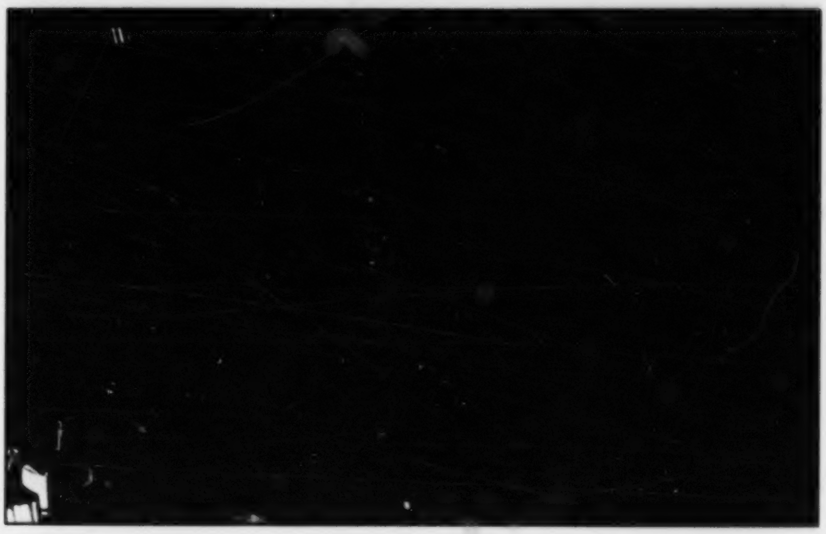
The services have about 10,900 recruiting specialists. Normally, personnel must be in the service for several years before they are eligible to become recruiters. About 350 military personnel become recruiters each year. Recruiters may choose to make a career of recruiting and, in time, may supervise one or more recruiting offices. Many recruiters, however, spend only a few years in recruiting, and make their careers in other occupations.



SALES AND STOCK SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military operates retail stores and snack bars for its personnel on bases and aboard ships in the United States and overseas. Military stores, called exchanges, sell merchandise similar to that sold in civilian stores but at a discount. Sales and stock specialists operate retail food and merchandise stores for military personnel.



What They Do

Sales and stock specialists in the military perform some or all of the following duties:

- Operate snack bars, laundries, and dry cleaning facilities
- Order and receive merchandise and food for retail sales
- Inspect food and merchandise for spoilage or damage
- Price and mark retail sales items, using markers and stamping machines
- Stock shelves and racks for the display of products
- Count merchandise and supplies during inventories
- Record and account for money received and prepare bank deposits

Work Environment

Sales and stock specialists work on land and aboard ships in retail stores, snack bars, and storerooms.

Physical Demands

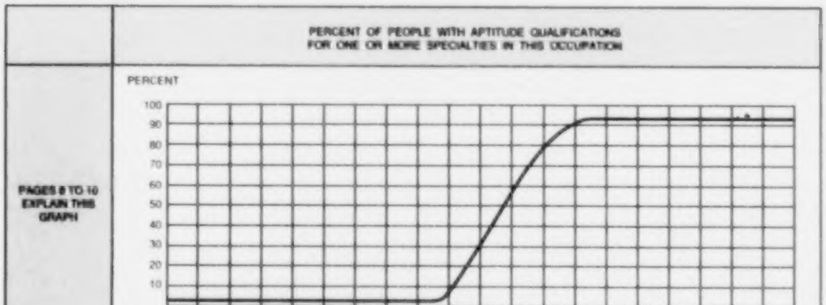
The ability to speak clearly is required. Sales and stock specialists may have to lift and carry heavy objects.

Training Provided

Job training consists of 6 to 7 weeks of classroom instruction for some specialties. For others, training occurs on the job. Course content includes:

- Stock procedures
- Vending machine operation and maintenance
- Record keeping and bookkeeping procedures

Further training occurs on the job.



Helpful Attributes

Helpful school subjects include bookkeeping, mathematics, and typing. Helpful attributes include:

- Interest in marketing and sales work
- Ability to use cash registers, calculators, and adding machines
- Interest in working with people

Civilian Counterparts

Civilian sales and stock specialists work in many kinds of retail businesses, such as grocery stores and department stores. They perform duties similar to military sales and stock specialists. They may also be called sales clerks or stock clerks.

Opportunities

The services have about 4,800 sales and stock specialists. On average, they need about 300 new specialists each year. After job training, sales and stock specialists are assigned to bases or shipboard retail stores and storerooms. Initially, they work under close supervision. With experience, they work more independently, train new workers, and assume more responsibility for sales and stock activities. In time, they may become department supervisors or retail store supervisors.

SHIPPING AND RECEIVING SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The services ship many tons of supplies and equipment each day. Everything from tanks and missiles to magazines and soft drinks is shipped to bases around the world. Shipping and receiving specialists prepare goods for shipment by land, sea, and air. They also handle goods at the receiving end.

What They Do

Shipping and receiving specialists in the military perform some or all of the following duties:

- Prepare shipping papers for goods to be shipped
- Choose the kind of transport and route
- Calculate shipping costs based on the shipping rates of commercial carriers
- Pack, crate, weigh, and mark goods for shipment
- Load and unload crates, using forklifts, hand trucks, and conveyers
- Inspect goods received for damage
- Check shipping papers and goods received to make sure the correct type and amount of goods were shipped

Physical Demands

Shipping and receiving specialists may need to lift and carry heavy crates. Normal color vision, good eyesight, and normal hearing may be required for some specialties.

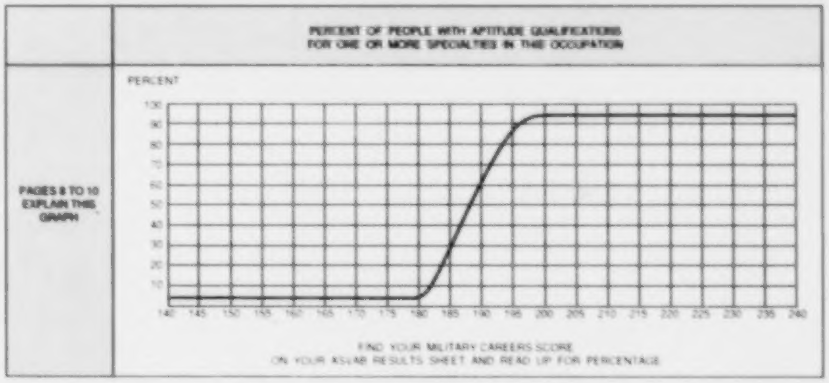
Helpful Attributes

Helpful school subjects include math and typing. Helpful attributes include:

- Interest in operating forklifts and conveyers
- Preference for a combination of physical and office work
- Ability to keep detailed records and operate office equipment

Work Environment

Shipping and receiving specialists in the military work mainly indoors, in supply centers, or in storerooms aboard ships. They may work outdoors when loading or inspecting shipments.



Training Provided

Job training consists of 3 to 8 weeks of classroom instruction. Course content typically includes:

- Procedures for receiving, packing, and shipping goods
- Procedures for handling and storing food, medicine, ammunition, and other supplies needing special handling
- Record keeping methods
- Operation of forklifts and conveyors

Civilian Counterparts

Civilian shipping and receiving specialists work in business or government warehouses and stockrooms. They perform duties similar to military shipping and receiving specialists. They may also be called shipping and receiving clerks or cargo agents.

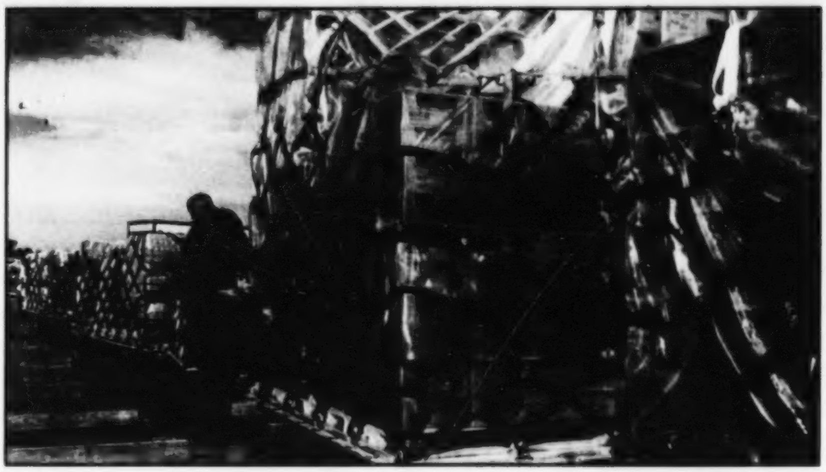
Opportunities

The services have about 23,300 shipping and receiving specialists. On average, they need about 2,600 new specialists each year. After job training, specialists prepare shipments under close supervision. With experience, they work more independently and may supervise other specialists. In time, they may become supply or warehouse superintendents.

STOCK AND INVENTORY SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military maintains a large inventory of food, medicines, ammunition, spare parts, and other supplies. Keeping the military's supply system operating smoothly is an important job. The lives of combat troops in the field may depend on receiving the right supplies on time. Stock and inventory specialists receive, store, record, and issue military supplies.



What They Do

Stock and inventory specialists in the military perform some or all of the following duties:

- Locate and catalog stock, usually using microfiche viewers
- Verify the quantity and description of stock received
- Give special handling to medicine, ammunition, and other delicate supplies
- Select the correct stock for issue
- Load, unload, and move stock using equipment such as forklifts and hand trucks
- Keep records on incoming and outgoing stock
- Prepare storage space

Civilian Counterparts

Civilian stock and inventory specialists work for factories, parts departments in repair shops, department stores, and government warehouses and stockrooms. They perform duties similar to military stock and inventory specialists. Civilian stock and inventory specialists may also be called stock control clerks, parts clerks, or storekeepers.

Helpful Attributes

Helpful school subjects include math, bookkeeping, accounting, business administration, and typing. Helpful attributes include:

- Ability to keep accurate records
- Preference for physical work
- Interest in operating forklifts and other warehouse equipment
- Preference for work requiring attention to detail

Physical Demands

Stock and inventory specialists may have to lift and carry heavy boxes of ammunition and other supplies. Normal color vision is required for specialties that handle color-coded parts, supplies, and ammunition.

Training Provided

Job training consists of 4 to 6 weeks of classroom instruction, including practice in handling and storing stock. Course content typically includes:

- Stock control and accounting procedures
- Procedures for shipping, receiving, storing, and issuing stock
- Procedures for handling medical and food supplies
- Movement, storage, and maintenance of ammunition

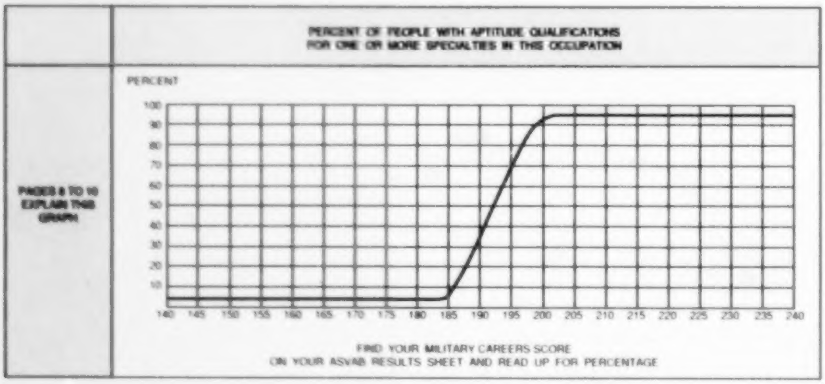
Further training occurs on the job and through advanced courses.

Work Environment

Stock and inventory specialists work in large general supply centers, small specialized supply rooms, or ship storerooms.

Opportunities

The services have about 72,100 stock and inventory specialists. On average, they need about 6,700 new specialists each year. After job training, specialists stock shelves, learn about different parts and supplies, and fill supply requests. In time, they also estimate needs, order stock, and supervise others. Eventually, they may become superintendents of supply centers.



TELEPHONE OPERATORS

Army
Navy
Air Force
Marine Corps

The telephone plays a big part in military communications. Portable telephone systems are used by units in the field to send and receive orders. Intercom systems are used aboard ships and in buildings. Telephone operators direct telephone traffic. They relay incoming and outgoing calls through switchboards.

What They Do

Telephone operators in the military perform some or all of the following duties:

- Operate different types of telephone switchboards
- Install and operate switchboards in the field
- Patch long distance calls through local exchanges
- Respond rapidly to emergency calls
- Receive and deliver messages or battle commands
- Maintain switchboard equipment

Helpful Attributes

Helpful school subjects include speech and mathematics. Helpful attributes include:

- Ability to remain calm in an emergency
- Good organizational skills
- Interest in work requiring attention to detail
- Patience and courtesy
- Ability to follow spoken instructions

Physical Demands

Normal color vision, hearing, and the ability to speak clearly are required. Operators must often sit for long periods.

Special Requirements

Although most telephone operator specialties are open to both men and women, one specialty in this occupation is open only to men.

Training Provided

Job training consists of 12 to 22 weeks of instruction, including practice with switchboards. Course content typically includes:

- Proper operation of telephone switchboards
- Procedures for installing field switchboard units

Further training occurs on the job and through advanced courses. The Army offers a certified apprenticeship program for one specialty in this occupation.

Work Environment

Telephone operators may work indoors or outdoors, depending on specialty. Some work in offices or aboard ships. Others often work in the field, where they install and operate portable switchboards.

Civilian Counterparts

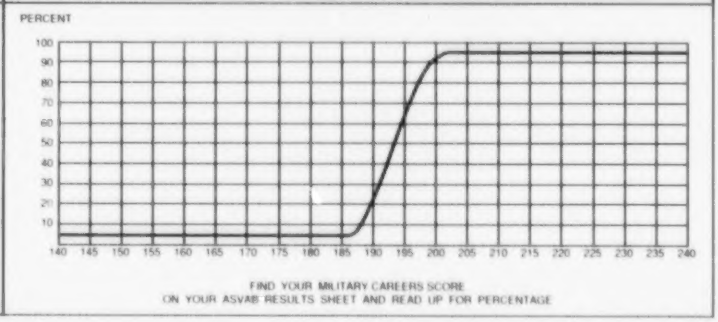
Civilian telephone operators work for telephone companies, police stations, telephone answering services, and many businesses. They perform duties similar to military telephone operators, but do not install equipment. Civilian operators usually specialize as central office operators, long distance operators, or directory assistance operators. They may also be called PBX operators, switchboard operators, or telephone-answering service operators.

Opportunities

The military has about 9,100 telephone operators. On average, the services need about 850 new operators each year. After job training, telephone operators work at switchboards under supervision. With experience, they work more independently and supervise other telephone operators. Eventually, they may manage communications sections.

PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH



TELETYPE OPERATORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Teletype machines are special typewriters that can send and receive messages over telegraph lines. Teletypes that disguise messages using secret codes are called cryptographic machines. Teletype operators send and receive messages using teletype and cryptographic machines.

What They Do

Teletype operators in the military perform some or all of the following duties:

- Prepare and send messages through teletype and cryptographic machines
- Receive and decode incoming messages, following security procedures
- Categorize and stamp messages with the proper security classification: "Secret," "Top Secret," etc.
- Keep logs of messages
- Help install and maintain equipment

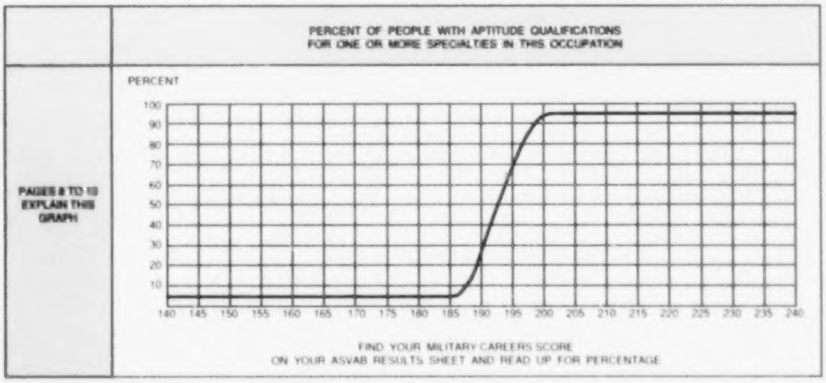
Helpful Attributes

Helpful school subjects include typing and English. Helpful attributes include:

- Interest in operating teletype machines
- Ability to remember and follow specific procedures
- Interest in working with codes

Work Environment

Teletype operators may work indoors in offices. They may also work outdoors in tents with field units.



Physical Demands

Normal color vision is needed to install, operate, and maintain teletype and cryptographic equipment.

Civilian Counterparts

Civilian teletype operators work for telegraph companies, businesses, government, and law enforcement agencies. They perform duties similar to military teletype operators, but are less likely to use secret codes.

Training Provided

Job training consists of 9 to 15 weeks of classroom instruction, including practice with teletype machines. Training length varies depending on speciality. Course content typically includes:

- Use and care of teletype and cryptographic equipment
- Keyboard technique
- Procedures for transmitting and receiving secret messages

Further training occurs on the job and through advanced courses. The Army offers a certified apprenticeship program for one specialty in this occupation.

Opportunities

The military has about 14,100 teletype operators. On average, the services need about 1,600 new operators each year. After job training, operators type and file messages under close supervision. With experience, they work more independently, coding and decoding messages. In time, they may become supervisors of communication centers.

TRAINERS

Navy
Air Force
Marine Corps
Coast Guard

The military trains new personnel in the job skills needed to begin their careers in the service. The military also offers advanced training and retraining to nearly all personnel. Instruction in electronics, health care, computer sciences, and aviation are just a few of the many vocational and technical areas for which the military has training programs. Trainers teach classes and give demonstrations to provide military personnel with the knowledge needed to perform their jobs.

What They Do

Trainers in the military perform some or all of the following duties:

- Prepare course outlines and materials to present during training
- Select training materials, such as textbooks and films
- Teach classes and give lectures in person, over closed-circuit TV, or on videotape
- Work with students individually when necessary
- Test and evaluate student progress

Helpful Attributes

Helpful school subjects include public speaking. Helpful attributes include:

- Interest in teaching
- Ability to communicate effectively, in writing and speaking
- Interest in counseling and promoting human relations

Physical Demands

Trainers must be able to speak clearly and distinctly.

Training Provided

Training consists of 2 to 14 weeks of classroom instruction, including practice teaching. Length of training varies depending on specialty. Course content typically includes:

- Lesson planning
- Instructional methods
- Communications skills

Work Environment

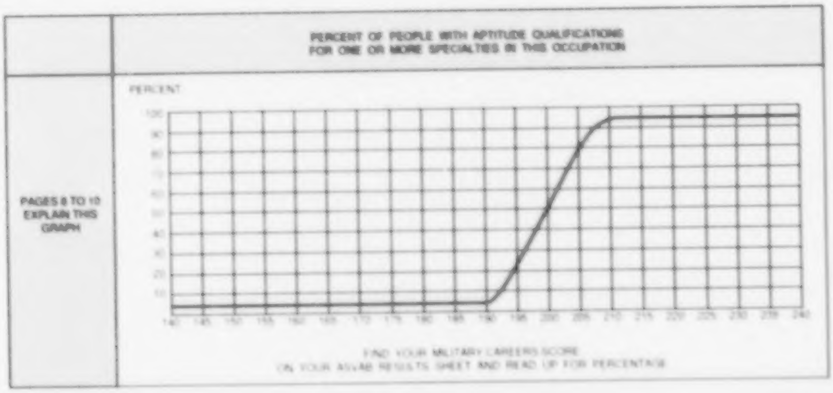
Trainers in the military work either indoors or outdoors, depending on the type of training they provide and their specialty area.

Civilian Counterparts

Civilian trainers work for vocational and technical schools, high schools, colleges, businesses, and government agencies. Their duties are similar to those performed by military trainers. Civilian trainers may be called teachers, instructors, or training representatives.

Opportunities

The services have about 7,300 trainers. On average, they need about 550 new trainers each year. Because trainers must have an in-depth knowledge of a subject to be effective, only experienced personnel may become trainers. Normally, trainers are selected from those workers in each occupation who are both good in their work and have shown an ability to teach. Often, they divide their time between regular work and training duties.



TRANSPORTATION SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military constantly moves passengers and cargo. Personnel often travel to meetings, training sessions, and new assignments. Supplies and equipment to support troops must be shipped regularly. Transportation specialists plan air, sea, and land transportation for people and cargo. Some assist passenger travel as gate agents and flight attendants.

What They Do

Transportation specialists in the military perform some or all of the following duties:

- Arrange for passenger travel via plane, bus, train, or boat
- Arrange for shipment and delivery of household goods
- Find the least expensive and most direct shipping routes for cargo
- Prepare transportation requests and shipping documents
- Check in passengers and baggage before boarding military transport flights
- Serve as military airplane flight attendants
- Inspect cargo for proper packing, loading, and marking

Work Environment

Transportation specialists usually work in offices. They may work outdoors when escorting passengers or processing shipments. Flight attendants work on land and in airplanes.

Training Provided

Job training consists of 6 to 9 weeks of classroom instruction, including practice in making transportation arrangements. Course content typically includes:

- Planning transportation for personnel and cargo
- Proper cargo handling, shipping, and storing methods
- Analysis of transportation documents

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include mathematics, English, and typing. Helpful attributes include:

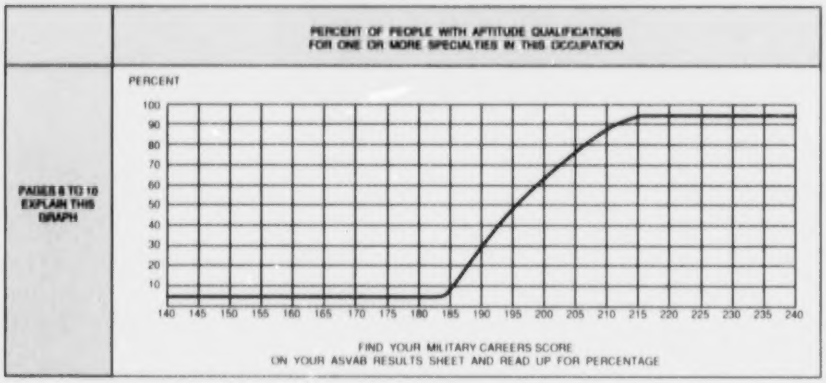
- Interest in arranging travel schedules
- Interest in using adding machines, computers, and typewriters
- Interest in serving people

Civilian Counterparts

Civilian transportation specialists work for airlines, shipping firms, and commercial freight lines. They perform duties similar to military transportation specialists. Civilian transportation specialists may also be called travel clerks, reservation clerks, or transportation agents.

Opportunities

The military has about 6,500 transportation specialists. On average, the services need about 900 new specialists each year. After job training, they make travel and shipping arrangements under direct supervision. Some may specialize as flight attendants and gate agents. With experience, they may become supervisors of other transportation specialists. In time, they may manage transportation offices.



BEST COPY AVAILABLE

Service Occupations

- Corrections Specialists
- Detectives
- Firefighters
- Food Service Specialists
- Military Police

BEST COPY AVAILABLE

CORRECTIONS SPECIALISTS

Army
Navy
Air Force
Marine Corps

The military operates its own correctional facilities, which are called brigs, stockades, or disciplinary barracks. Personnel who violate military laws may be placed in one of these facilities. Corrections specialists guard inmates in military correctional facilities.

What They Do

Corrections specialists in the military perform some or all of the following duties:

- Stand guard at gates, cellblocks, or on towers
- Search inmates and cells for contraband (illegal goods)
- Search vehicles entering and leaving correctional facilities
- Participate in informal counseling sessions with inmates
- Investigate prisoner disturbances
- Inspect facilities to see if they are clean and safe
- Perform fire and riot control duties

Work Environment

Corrections specialists in the military usually work indoors. They may work outdoors when guarding prisoners in exercise yards.

Training Provided

Job training consists of 5 to 10 weeks of classroom instruction including practice in guard techniques. Course content typically includes:

- Prisoner control and discipline procedures
- Ways of searching for contraband
- Inmate counseling techniques
- Procedures for moving prisoners between buildings and facilities
- Proper treatment and care of inmates
- Techniques for inspecting facilities for health and safety hazards

Helpful Attributes

Helpful attributes include:

- Interest in safeguarding and caring for others
- Ability to remain calm under pressure

Civilian Counterparts

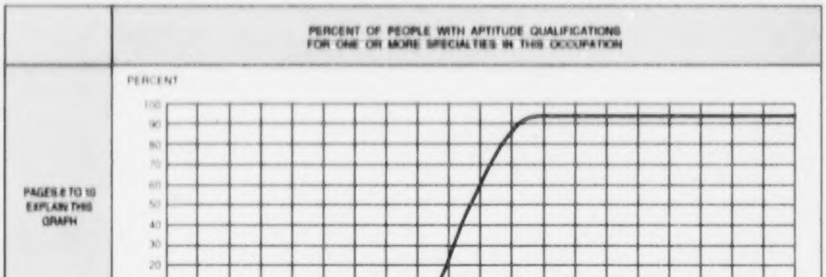
Civilian corrections specialists work in city and county jails, federal and state prisons, reformatories, and other correctional facilities. They perform duties similar to military corrections specialists. They may be called guards, correction officers, or deputy guards.

Special Requirements

Some specialties have minimum age and height requirements.

Opportunities

The military has about 8,400 corrections specialists. On average, the services need about 850 new specialists each year. After job training, specialists are assigned to correctional facilities, where they work under the direction of experienced corrections specialists. With experience, corrections specialists may supervise and help train new workers. In time, they may become correction facilities superintendents.



DETECTIVES

Army
Navy
Air Force
Marine Corps
Coast Guard

Military police forces are responsible for conducting criminal investigations. Detectives investigate crimes committed on military property or that involve military personnel. They also conduct investigations to guard against espionage.

What They Do

Detectives in the military perform some or all of the following duties:

- Investigate crimes against the U.S. (espionage and treason) and against government property (sabotage)
- Help special agents investigate possible terrorist activities
- Investigate criminal activities (theft, assault, drug selling)
- Interview witnesses and question suspects, sometimes using polygraph (lie detector) machines
- Help with ballistic (bullet movement) and forensic (police lab) studies for clues
- Testify at trials

Helpful Attributes

Helpful school subjects include foreign languages, chemistry, speech, and government. Helpful attributes include:

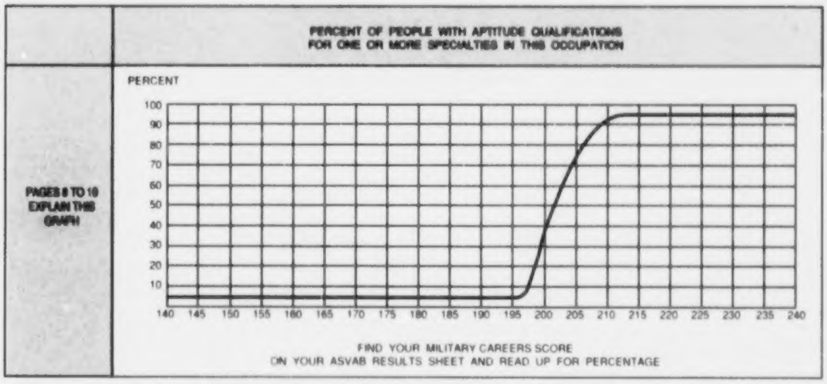
- Interest in law enforcement and crime prevention
- Willingness to perform potentially dangerous work
- Interest in gathering and analyzing information

Work Environment

Detectives in the military work mainly indoors, but may work outdoors while conducting investigations.

Civilian Counterparts

Civilian detectives work in federal, state, and local intelligence and law enforcement agencies. Some work as self-employed private detectives. Civilian detectives perform duties similar to military detectives. They may be called plainclothes officers, homicide detectives, private investigators, or undercover agents.



Physical Demands

Normal color vision is required to enter this occupation.

Training Provided

Job training consists of 10 to 12 weeks of classroom instruction. Course content typically includes:

- Investigation procedures and techniques
- Collection and evaluation of evidence
- Civil and military laws
- Ballistics, fingerprinting, and polygraph techniques

Further training occurs on the job and through advanced courses.

Opportunities

The services have about 2,800 detectives. On average, they need 250 new detectives each year. After job training, new detectives help more experienced detectives conduct investigations. In time, they may lead investigations and work on more difficult cases. Eventually, detectives may become chiefs of detectives or superintendents of military police operations for bases or ships.

FIREFIGHTERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Military bases have their own protection services, including fire departments. Military firefighting units are responsible for protecting lives and property from fire. Firefighters put out, control, and help prevent fires in buildings, aircraft, and aboard ships.

What They Do

Firefighters in the military perform some or all of the following duties:

- Operate pumps, hoses, and extinguishers
- Force entry into aircraft, vehicles, and buildings in order to fight fires and rescue personnel
- Drive firefighting trucks and emergency rescue vehicles
- Give first aid to injured personnel
- Inspect aircraft, buildings, and equipment for fire hazards
- Teach fire protection procedures
- Repair firefighting equipment and fill fire extinguishers

Physical Demands

Good vision without glasses and a clear speaking voice are required to enter some specialties in this occupation. Firefighters have to climb ladders and stairs. They must also be able to lift and carry injured personnel.

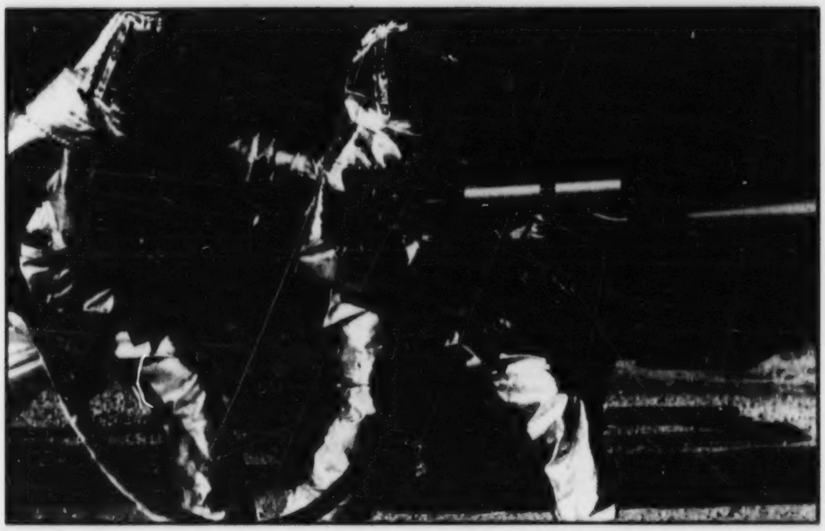
Helpful Attributes

Helpful school subjects include health and general science. Helpful attributes include:

- Ability to remain calm under stress
- Willingness to risk injury to help others
- Ability to think and act decisively

Work Environment

Firefighters work indoors and outdoors while fighting fires. They are exposed to the smoke, heat, and flames of the fires they fight.



Training Provided

Job training consists of 7 to 11 weeks of classroom training, including practice in fighting fires. Course content typically includes:

- Types of fires
- Firefighting equipment operations
- Firefighting procedures
- First aid procedures
- Rescue procedures

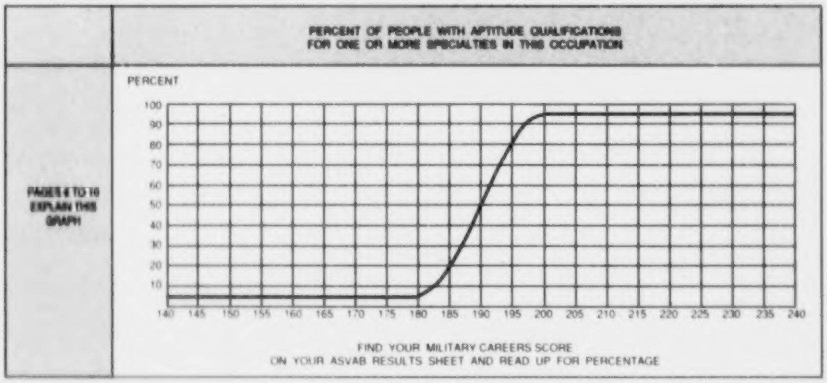
Further training occurs on the job. The Army and the Navy offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian firefighters work for city and county fire departments, other government agencies, and industrial firms. They perform duties similar to those performed by military firefighters, including rescue and salvage work.

Opportunities

The services have about 16,700 firefighters. On average, they need about 1,500 new firefighters each year. After training, new firefighters perform work under close supervision. With experience, they work more independently and may supervise others. Eventually, they may become chiefs of base fire departments or similar units.



FOOD SERVICE SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Every day, more than one million meals are prepared in military kitchens. Some kitchens prepare thousands of meals at one time, while others prepare food for small groups of people. Food service specialists prepare all types of food according to standard and dietetic recipes. They also order and inspect food supplies and prepare meats for cooking. Turn to page 378 for more information about food service specialists.

What They Do

Food service specialists in the military perform some or all of the following duties:

- Order, receive, and inspect meat, fish, fruit, and vegetables
- Prepare standard cuts of meat using cleavers, knives, and bandsaws
- Cook steaks, chops, and roasts
- Bake or fry chicken, turkey, and fish
- Prepare gravies and sauces
- Bake breads, cakes, pies, and pastries
- Serve food in dining halls, hospitals, field kitchens, or aboard ship
- Clean ovens, stoves, mixers, pots, and utensils

Helpful Attributes

Helpful school subjects include home economics, math, accounting, and chemistry. Helpful attributes include:

- Interest in cooking
- Interest in working with the hands

Training Provided

Job training consists of 9 to 14 weeks of classroom instruction, including practice in food preparation. Training length varies depending on specialty. Course content typically includes:

- Standard and dietetic menus and recipes
- Preparation and cooking of various foodstuffs and bakery products
- Food and supply ordering
- Storage of meats, poultry, and other perishable items

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Work Environment

Food service specialists normally work in clean, sanitary kitchens and dining facilities. They may sometimes work in refrigerated meat lockers. Sometimes they work outdoors in tents while preparing and serving food under field conditions.

Physical Demands

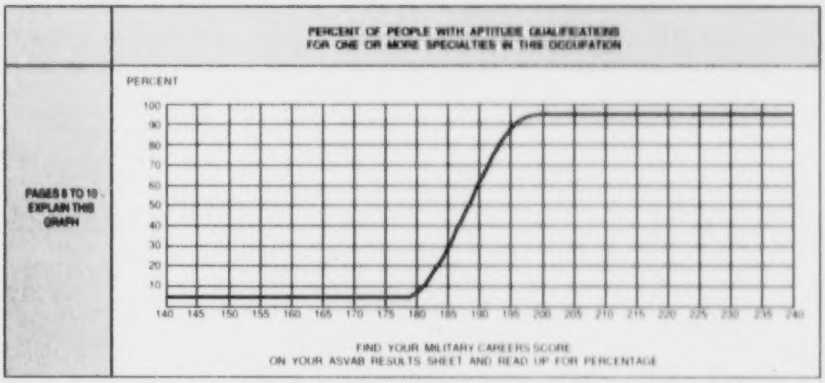
Food service specialists may have to lift and carry heavy containers of foodstuffs and large cooking utensils.

Civilian Counterparts

Civilian food service specialists work in cafes, restaurants, and cafeterias. They also work in hotels, hospitals, manufacturing plants, schools, and other organizations that have their own dining facilities. Depending on specialty, food service specialists are called cooks, chefs, bakers, butchers, or meat cutters.

Opportunities

The services have about 34,400 food service specialists. On average, they need about 4,600 new specialists each year. After job training, food service specialists help prepare and serve food under close supervision. Some food service specialists specialize as bakers, cooks, butchers, or meat cutters. With experience, they work more independently and may train new food service specialists. Eventually, they may become head cooks, chefs, or food service supervisors.



MILITARY POLICE

Army
Navy
Air Force
Marine Corps

The services have their own police forces for many of the same reasons that civilians do: to control traffic, prevent crime, and respond to emergencies. Military police protect lives and property on military bases by enforcing military laws and regulations. Turn to page 388 for more information about military police.

What They Do

Military police perform some or all of the following duties:

- Patrol areas on foot, by car, or by boat
- Interview witnesses, victims, and suspects in the course of investigating crimes
- Collect fingerprints and other evidence
- Arrest and charge criminal suspects
- Train and walk with police dogs
- Testify in court
- Guard entrances and direct traffic

Training Provided

Occupational training consists of 8 to 12 weeks of classroom instruction, including practice in police methods. Course content typically includes:

- Military and civil laws and jurisdiction
- Crime and accident investigation procedures
- Evidence collection procedures, including fingerprinting and suspect questioning
- Use of firearms
- Traffic and crowd control procedures
- Arrest and restraint of suspects
- Hand-to-hand defense techniques (judo, karate, etc.)

Further training occurs on the job and through advanced courses. The Navy offers a certified apprenticeship program for one specialty in this occupation.

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Work Environment

Military police work both indoors and outdoors. They may work on foot, in cars, or in boats.

Helpful Attributes

Helpful school subjects include government and speech. Helpful attributes include:

- Interest in law enforcement and crime prevention
- Ability to remain calm in stressful situations
- Ability to think and react quickly

Physical Demands

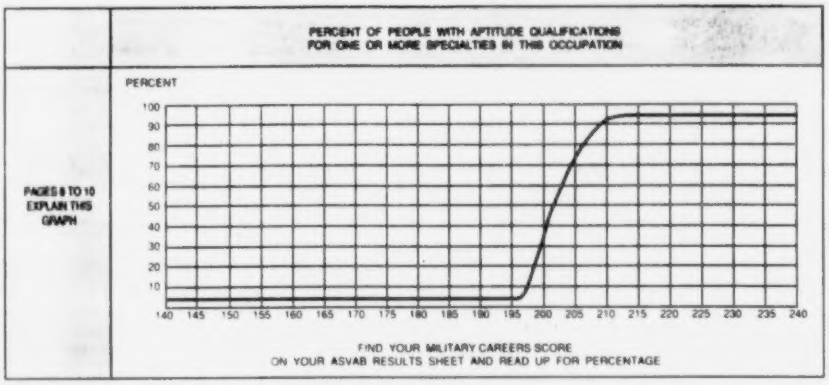
Normal color vision, hearing, and a clear speaking voice are usually required to enter this occupation. Some specialties have minimum height requirements.

Civilian Counterparts

Civilian police officers generally work for state, county, or city law enforcement agencies. Some work as security guards for industrial firms, airports, and other businesses and institutions. They perform duties similar to military police.

Opportunities

The military has about 59,500 military police. On average, the services need about 8,600 new military police each year. After job training, military police guard and patrol bases, and direct traffic. With experience, they question crime suspects and collect evidence. They may also supervise other police officers. In time, they may become station chiefs or police superintendents.



Vehicle and Machinery Mechanic Occupations

- Aircraft Mechanics
- Automobile Mechanics
- Automotive Body Repairers
- Divers
- Engine Mechanics
- Heating and Cooling Mechanics
- Heavy Equipment Mechanics
- Marine Engine Mechanics
- Powerhouse Mechanics
- Riggers

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AIRCRAFT MECHANICS

Army
Navy
Air Force
Marine Corps
Coast Guard

Military aircraft fly hundreds of missions each day for transport, patrol, and flight training. They need frequent servicing to remain safe and ready to fly. Aircraft mechanics inspect, service, and repair helicopters and airplanes. Turn to page 364 for more information about aircraft mechanics.

What They Do

Aircraft mechanics in the military perform some or all of the following duties:

- Service and repair helicopter, jet, and propeller aircraft engines
- Inspect and repair aircraft wings, fuselages (bodies), and tail assemblies
- Service and repair aircraft landing gear
- Repair or replace starters, lights, batteries, wiring, and other electrical parts

Helpful Attributes

Helpful school subjects include math and shop mechanics. Helpful attributes include:

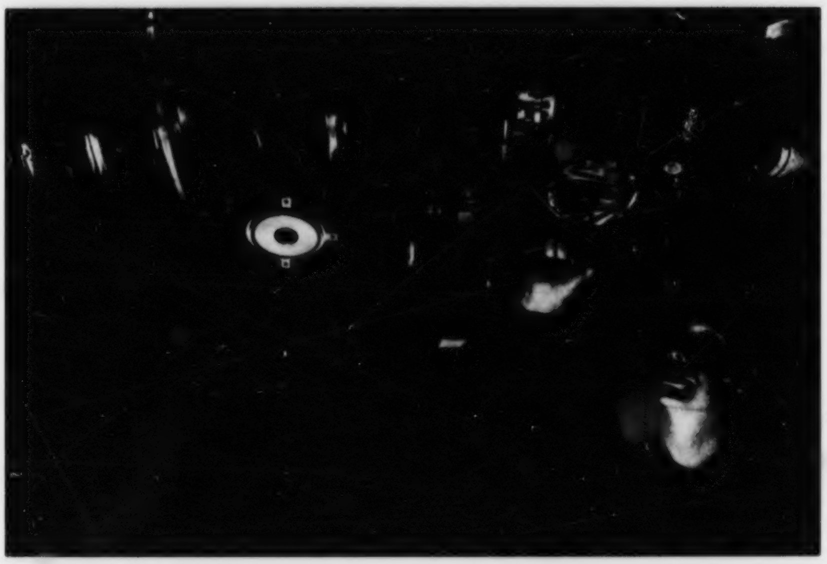
- Interest in work involving aircraft
- Interest in engine mechanics
- Ability to use hand and power tools

Training Provided

Job training consists of 3 to 17 weeks of classroom instruction, including inspection and repair of aircraft engines and equipment. Training length varies depending upon the specialty. Course content typically includes:

- Engine disassembly and repair
- Repair of hydraulic, fuel, and electrical systems
- Repair of aluminum, steel, and fiberglass airframes and coverings

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.



Work Environment

Aircraft mechanics work in aircraft hangars and machine shops located on air bases or aboard aircraft carriers.

Civilian Counterparts

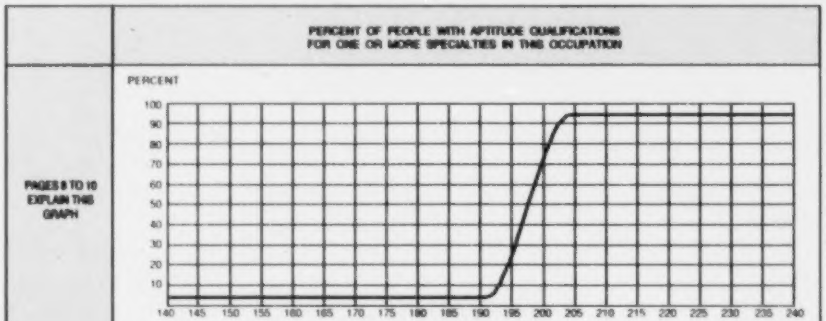
Civilian aircraft mechanics work for aircraft manufacturers, commercial airlines, and government agencies. They perform duties similar to military aircraft mechanics. They may also be called airframe or powerplant mechanics.

Physical Demands

Some specialties require moderate to heavy lifting. Normal color vision is required to work with color-coded wiring.

Opportunities

The services have about 147,500 aircraft mechanics. On average, they need about 12,900 new mechanics each year. After job training, mechanics are assigned to an aircraft maintenance unit, where they perform routine maintenance and simple repair jobs. In time, they may perform more difficult repairs and train and supervise new mechanics. Eventually, they may become inspectors, shop supervisors, or maintenance superintendents.



AUTOMOBILE MECHANICS

Army
Navy
Air Force
Marine Corps

Jeeps, autos, and light trucks are used by the military to move troops and supplies. Jeeps fitted with guns and armor plate are also used as attack vehicles. Automobile mechanics maintain and repair automotive vehicles, such as jeeps, cars, and light trucks. Turn to page 366 for more information about automobile mechanics.

What They Do

Automobile mechanics in the military perform some or all of the following duties:

- Troubleshoot problems in vehicle engines, electrical systems, steering, brakes, and suspensions
- Tune and repair engines using engine test equipment
- Replace clutches, brakes, transmissions, and steering assemblies
- Repair auto pollution control equipment
- Replace starters, water pumps, and fuel pumps
- Establish and follow schedules for maintaining vehicles
- Keep records of repairs made and parts used

Work Environment

Auto mechanics usually work inside large repair garages. They work outdoors when making repairs in the field.

Physical Demands

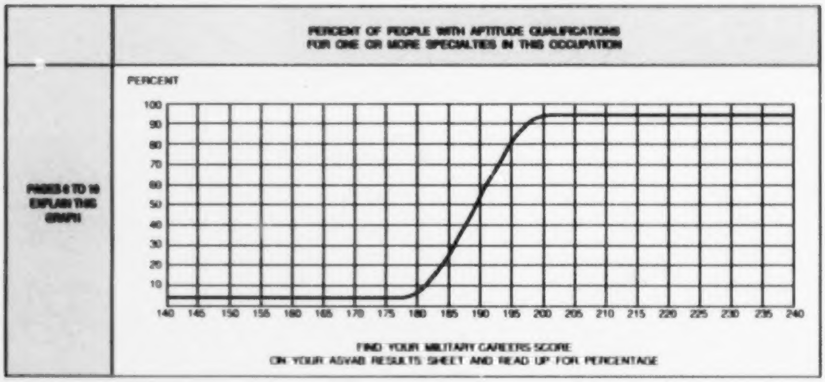
Normal color vision is required for some specialties to work with color-coded wiring and to read diagrams.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction, including practice in repairing motor vehicles. Longer training is necessary for some specialties. Course content typically includes:

- Tune-up of diesel and gasoline engines
- Troubleshooting mechanical and electrical problems
- Use of manuals and repair diagrams
- Record keeping

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.



Helpful Attributes

Helpful school subjects include auto mechanics and industrial arts. Helpful attributes include:

- Preference for physical work
- Interest in troubleshooting mechanical problems
- Interest in automobile engines and how they work

Civilian Counterparts

Civilian automobile mechanics work for service stations, repair garages, and auto dealers. They perform duties similar to military automobile mechanics. Civilian mechanics may also be called garage mechanics, carburetor mechanics, transmission mechanics, or radiator mechanics, depending on their specialty.

Opportunities

The services have about 37,000 automobile mechanics. On average, they need about 5,700 new mechanics each year. After job training, automobile mechanics repair vehicles under the direction of supervisors. With experience, they work more independently and are given more challenging repair problems. In time, automobile mechanics may advance to manage motor pools or maintenance units.

AUTOMOTIVE BODY REPAIRERS

Army
Navy
Air Force
Marine Corps

Military vehicles are used to support all types of military operations. They are driven off-road over rocks and rough ground, and they are driven in combat. The hard use they undergo often damages the frames and bodies of these vehicles. Automotive body repairers straighten bent vehicle frames and repair damaged body parts of jeeps, trucks, and autos.

What They Do

Automotive body repairers in the military perform some or all of the following duties:

- Pound out dented panels and fenders using mallets, hammers, and pry bars
- Weld damaged body parts and frames
- Straighten fenders, doors, hoods, and frames to their original shape and position
- Replace damaged body parts, including bumpers, body panels, and radiators
- Refinish bodies using body fillers, primers, and paints
- Cut and install safety glass in windows
- Keep accurate records of parts and supplies used and repairs made

Training Provided

Job training consists of 11 to 15 weeks of instruction, including practice in auto body repairing and welding. Course content typically includes:

- Repairing and replacing body panels, fenders, and radiators
- Refinishing and painting auto bodies and parts
- Checking and repairing vehicle frame alignment
- Welding body panels, frames, and parts
- Cutting and installing automotive glass

The Army offers certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian automotive body repairers work in auto body shops and repair garages. They perform duties similar to military automotive body repairers.

Physical Demands

Automotive body repairers may have to lift heavy body parts and move heavy tools and equipment. They sometimes have to stoop, kneel, and work in cramped positions. Normal color vision is required to match paint colors and set and adjust welding torches.

Helpful Attributes

Helpful school subjects include auto mechanics, auto body repair, and industrial arts. Helpful attributes include:

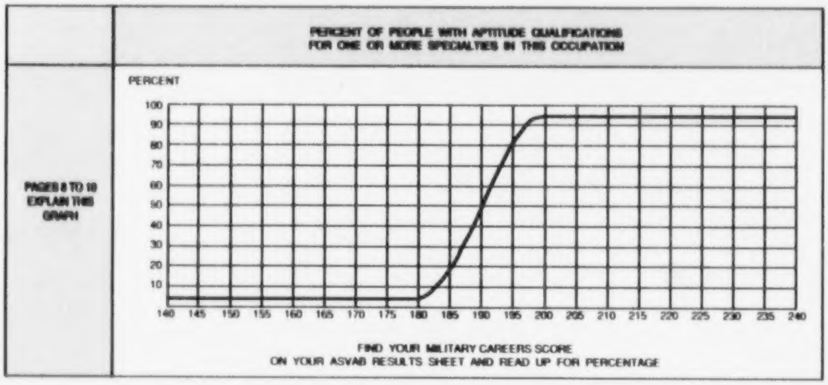
- Preference for doing physical work
- Ability to use hand and power tools
- Interest in working with cars and trucks

Work Environment

Automotive body repairers work in military auto repair shops and garages.

Opportunities

The services have about 1,000 automotive body repairers. On average, they need about 100 new automotive body repairers each year. After job training, they perform work in teams under close supervision. With experience, they work more independently and perform more complicated repairs. In time, they may supervise and help train other automotive body repairers. Career-minded automotive body repairers may advance to manage repair and maintenance departments.



DIVERS

Army
Navy
Marine Corps
Coast Guard

Sometimes, military tasks such as ship repair, construction, and patrolling must be done underwater. Divers in the military perform this work. They usually specialize either as scuba divers, who work just below the surface, or as deep sea divers, who may work for long periods of time in depths up to 300 feet.

What They Do

Divers in the military perform some or all of the following duties:

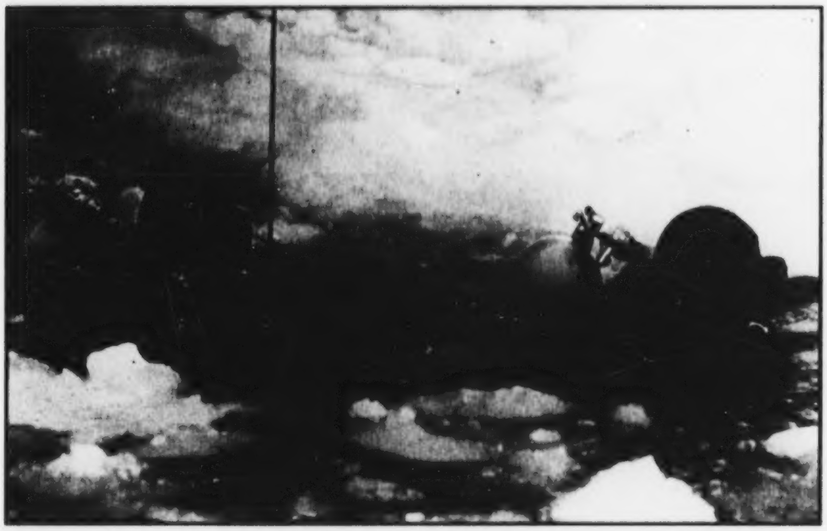
- Inspect and clean ship propellers and hulls
- Patch damaged ship hulls using underwater welding equipment
- Patrol the waters below ships at anchor
- Salvage (recover) sunken equipment
- Assist with underwater construction of piers and harbor facilities
- Survey rivers, beaches, and harbors for underwater obstacles
- Use explosives to clear underwater obstacles

Physical Demands

Divers must be good swimmers and physically strong.

Special Requirements

Although there are women divers, some specialties in this occupation are open only to men.



Training Provided

Job training consists of 5 to 13 weeks of classroom instruction, including practice in diving and repair work. Training length varies depending on specialty. Course content typically includes:

- Principles of scuba diving
- Underwater welding and cutting
- Use and care of hand and power tools
- Maintenance of diving equipment

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include shop mechanics and building trades. Helpful attributes include:

- Interest in underwater diving
- Ability to stay calm under stress
- A high degree of self-reliance

Work Environment

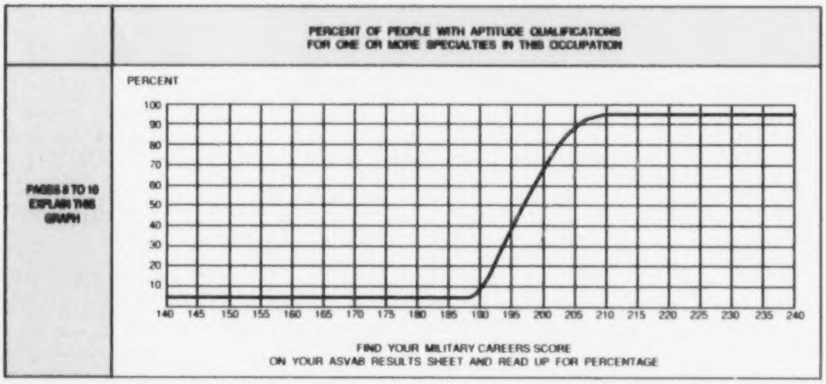
Divers work underwater. However, they plan and prepare for work on land or aboard ships. Because diving is not usually a full-time job, divers often have another job specialty in which they work.

Civilian Counterparts

Civilian divers work for oil companies, salvage companies, underwater construction firms, and police or fire rescue units. They perform duties similar to divers in the military.

Opportunities

The services have about 700 divers. On average, they need about 50 new divers each year. After job training, divers work in teams headed by experienced divers. Eventually, they may become master divers and supervise diving operations.



ENGINE MECHANICS

Army
Navy
Air Force
Marine Corps
Coast Guard

Keeping the military's fleet of over 50,000 trucks and buses on the road is a demanding job. Hard-driven engines need regular maintenance. Engine breakdowns need prompt repair. Engine mechanics maintain and repair combustion engines. They usually specialize by engine type, such as diesel or gasoline, or by vehicle type, such as truck or bus. They also repair the engines in mobile power generators.

What They Do

Engine mechanics in the military perform some or all of the following duties:

- Troubleshoot engine problems using engine analyzers and other test equipment
- Adjust and repair ignition, fuel, electrical, and steering systems
- Remove engines using hoists and jacks
- Replace pistons, rings, and valves
- Repair and replace clutches and transmissions
- Lubricate engines and other vehicle parts
- Keep records of repairs made and parts used

Physical Demands

Engine mechanics may have to lift heavy engine parts, tools, and equipment.

Helpful Attributes

Helpful school subjects include industrial arts and auto mechanics. Helpful attributes include:

- Interest in finding out why engines do not work and choosing the correct method of repair
- Preference for physical work
- Ability to use hand and power tools
- Ability to accurately interpret charts and diagrams

Work Environment

Engine mechanics usually work inside garages. Sometimes, they make emergency repairs in the field or on the roadside.

Training Provided

Job training consists of 7 to 23 weeks of classroom instruction, including practice in repairing engines. Training length varies depending on specialty. Course content typically includes:

- Engine troubleshooting using test equipment
- Disassembly and repair of gasoline and diesel engines
- Maintenance and repair of fuel, electrical, and hydraulic components

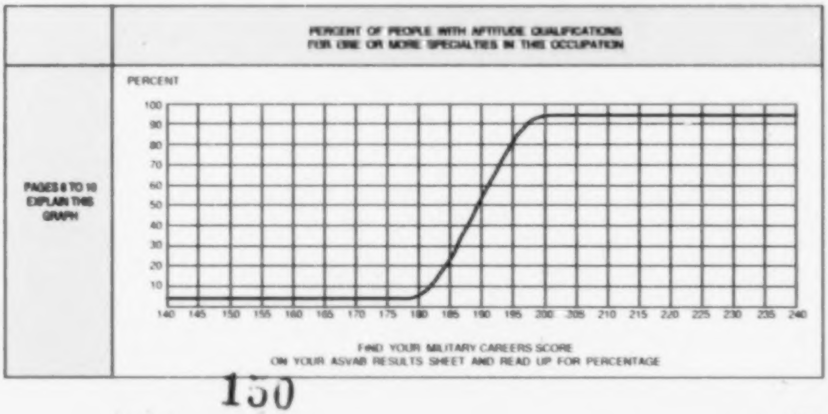
Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for this occupation.

Civilian Counterparts

Civilian engine mechanics usually work for garages, service stations, construction firms and truck or bus companies. They perform duties similar to military engine mechanics. They are also called truck, bus, and diesel mechanics.

Opportunities

The military has about 19,900 engine mechanics. On average, the services need about 2,400 new mechanics each year. After job training, new mechanics make simple repairs under the direction of supervisors. With experience, engine mechanics may specialize by type of engine and work with less supervision on more difficult repair tasks. In time, engine mechanics may supervise others or manage repair shops.



HEATING AND COOLING MECHANICS

Army
Navy
Air Force
Marine Corps
Coast Guard

Air conditioning and heating equipment is used to maintain comfortable temperatures in military buildings, airplanes, and ships. Refrigeration equipment is used to keep food cold and to keep some missile fuels at sub-zero storage temperatures. Heating and cooling mechanics install and repair air conditioning, refrigeration, and heating equipment.

What They Do

Heating and cooling mechanics in the military perform some or all of the following duties:

- Install and repair furnaces, boilers, and air conditioners
- Recharge cooling systems with refrigerant gases
- Install copper tubing systems that circulate water or cooling gases
- Replace compressor parts such as valves, pistons, bearings, and electrical motors on refrigeration units
- Repair thermostats and electrical circuits

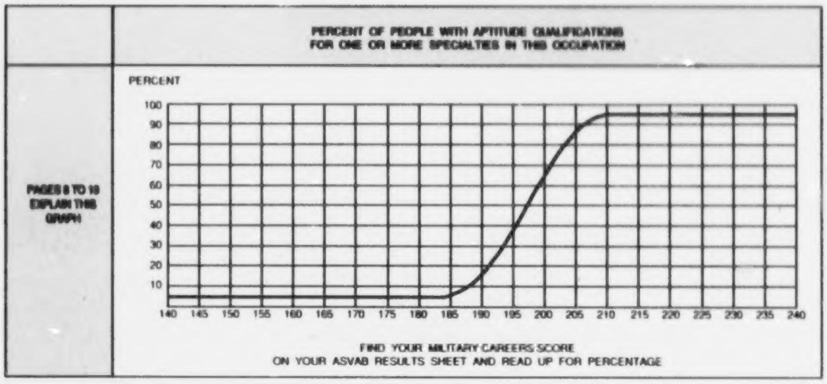
Physical Demands

Heating and cooling mechanics may have to lift or move heavy equipment. They are often required to stoop, kneel and work in cramped positions. Normal color vision is required for locating and repairing color-coded wiring.

Helpful Attributes

Helpful school subjects include science, math, and shop mechanics. Helpful attributes include:

- Ability to use hand and power tools
- Interest in working on machines
- Interest in solving problems



PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH

FIND YOUR MILITARY CAREERS SCORE ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

Work Environment

Heating and cooling mechanics may work inside repair shops. Frequently, they work wherever equipment is to be installed or repaired.

Training Provided

Job training consists of 8 to 22 weeks of classroom instruction, including practice in repair work. Training length varies depending on specialty. Course content typically includes:

- Refrigeration theory
- Installation and repair of refrigeration and air conditioning units
- Installation and repair of furnaces and boilers
- Use of diagrams and blueprints

Additional training is available on the job and in advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian heating and cooling mechanics work for contractors that install home furnaces and air conditioners or for firms that repair refrigerators and freezers in homes, grocery stores, factories, and warehouses. Heating and cooling mechanics in civilian life often specialize more than those in the military. They may be called heating, air conditioning, refrigeration, or climate control mechanics.

Opportunities

The military has about 11,000 heating and cooling mechanics. On average, the services need about 900 new mechanics each year. After job training, mechanics maintain and repair equipment under supervision. With experience, they may learn to diagnose mechanical problems and perform complicated repairs. Eventually, they may become superintendents of utilities for large bases.

HEAVY EQUIPMENT MECHANICS

Army
Navy
Air Force
Marine Corps
Coast Guard

Keeping heavy equipment in good working condition is vital to the success of military missions. Breakdowns in construction equipment can delay airfield and road building. Stalled combat vehicles can weaken defense forces. Heavy equipment mechanics repair bulldozers, power shovels, and other construction equipment. They also repair tanks, self-propelled missile launchers, and other combat vehicles.

What They Do

Heavy equipment mechanics in the military perform some or all of the following duties:

- Locate engine problems, using test equipment
- Place engines and transmissions in bulldozers and other heavy equipment using hoists and jacks
- Adjust or replace engine and transmission parts using power and hand tools
- Repair brake, steering, and electrical systems
- Inspect bearings, gears, and other parts for wear
- Replace or repair hydraulic arms or shovels and grader blades
- Repair tank turrets

Physical Demands

Heavy equipment mechanics may have to lift heavy parts and tools.

Special Requirements

Although some women are heavy equipment mechanics, some specialties in this occupation are open only to men.

Work Environment

Heavy equipment mechanics usually work in repair shops. They may work outdoors when making emergency repairs on heavy equipment.

Helpful Attributes

Helpful school subjects include auto mechanics and industrial arts. Helpful attributes include:

- Preference for doing physical work
- Interest in locating and repairing mechanical problems
- Interest in working with repair tools

Training Provided

Job training consists of 8 to 29 weeks of classroom instruction, including practice repairing heavy equipment. Training length varies depending on speciality. Course content typically includes:

- Engine disassembly and repair
- Maintenance and repair of steering, brake, hydraulic, and suspension systems
- Adjustment and repair of fuel systems

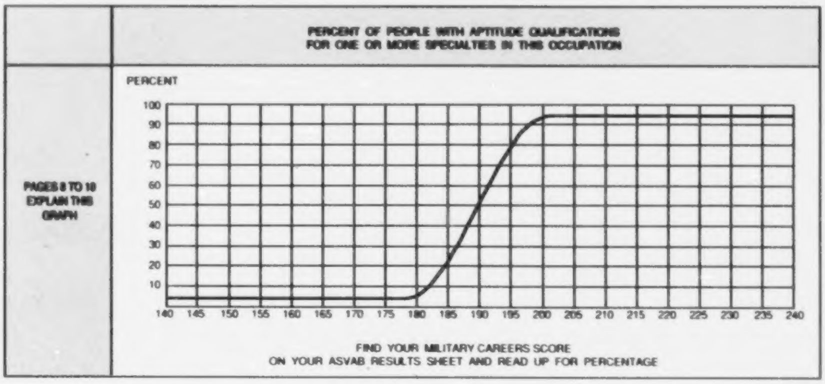
Further training occurs on the job and through advanced courses. The Army and Marine Corps offer certified apprenticeship programs in this occupation.

Civilian Counterparts

Civilian heavy equipment mechanics work for construction equipment dealers, farm equipment companies, and state highway agencies. They perform duties similar to military heavy equipment mechanics. They may also be known as construction equipment mechanics and endless track vehicle mechanics.

Opportunities

The military has about 11,400 heavy equipment mechanics. On average, the services need about 1,600 new mechanics each year. After job training, mechanics begin repairing equipment under the direction of a supervisor. With experience, heavy equipment mechanics work more independently and perform more challenging tasks. In time, they have the opportunity to supervise other workers and possibly manage repair shops.



PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS
FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH

FIND YOUR MILITARY CAREERS SCORE
ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

MARINE ENGINE MECHANICS

Army
Navy
Air Force
Coast Guard

The military operates many types of watercraft from small motor launches to large ships. Many of these vessels are powered by gasoline or diesel engines. Marine engine mechanics repair and maintain gasoline and diesel engines on ships, boats, and other watercraft. They also repair shipboard mechanical and electrical equipment. Turn to page 384 for more information about marine engine mechanics.

What They Do

Marine engine mechanics in the military perform some or all of the following duties:

- Repair and maintain shipboard gasoline and diesel engines
- Locate and repair machinery parts, including valves and piping systems
- Repair ship propulsion machinery
- Repair and service hoisting machinery and ship elevators
- Repair refrigeration and air conditioning equipment on ships
- Repair engine-related electrical systems

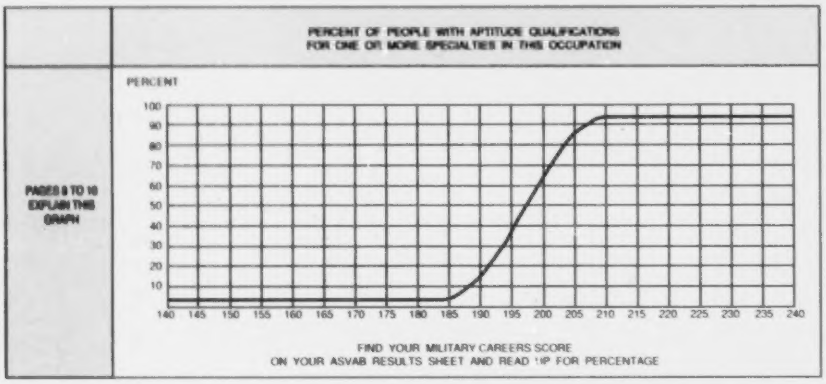
Helpful Attributes

Helpful school subjects include shop mechanics. Helpful attributes include:

- Interest in fixing engines and machinery
- Ability to use hand and power tools
- Preference for doing physical work

Physical Demands

Normal color vision is required to work with color-coded diagrams and wiring.



Training Provided

Job training consists of 9 to 24 weeks of classroom instruction, including practice in marine engine maintenance and repair. Training length varies depending on specialty. Course content typically includes:

- Internal combustion engine theory
- Repair of shipboard electronic and electrical machinery systems
- Service and repair of fuel injection systems
- Use and care of hand and power tools

Further training occurs on the job and through advanced courses. The Army offers a certified apprenticeship program for one specialty in this occupation.

Work Environment

Marine engine mechanics work aboard ships, normally in the engine or power rooms. Sometimes they work in repair centers on land bases. Working conditions in engine rooms tend to be noisy and hot.

Civilian Counterparts

Civilian marine engine mechanics work in many industries, including marine transportation, commercial fishing, and oil exploration and drilling. They perform duties similar to military marine engine mechanics.

Opportunities

The military has about 18,500 marine engine mechanics. On average, the services need about 1,300 new mechanics each year. After job training, they work under close supervision in repair centers or shipboard engine rooms. With experience, they work more independently and may supervise other mechanics. In time, marine engine mechanics may become supervisors of marine engine repair centers or shipboard maintenance sections.

POWERHOUSE MECHANICS

Army
Navy
Air Force
Coast Guard

Power generating stations (powerhouses) provide electric power for military bases, ships, and field camps. There are many types of powerhouses, from small gas generators to large nuclear reactors. Powerhouse mechanics install, maintain, and repair electrical and mechanical equipment in power generating stations.

What They Do

Powerhouse mechanics in the military perform some or all of the following duties:

- Install generating equipment, such as gasoline and diesel engines, turbines, and air compressors
- Repair and maintain nuclear power plants
- Inspect and service pumps, generators, batteries, and cables
- Tune engines using hand tools, timing lights, and combustion pressure gauges
- Diagnose (troubleshoot) engine and electrical system problems
- Replace damaged parts such as fuel injectors, valves, and pistons

Helpful Attributes

Helpful school subjects include shop mechanics and math. Helpful attributes include:

- Interest in repairing machines and equipment
- Preference for doing physical work
- Interest in nuclear power

Physical Demands

Powerhouse mechanics may have to lift and move heavy electrical generators or batteries. Normal color vision is required to work with color-coded wiring and cables.

Civilian Counterparts

Civilian powerhouse mechanics work for a wide variety of employers, such as utility and power companies, manufacturing companies, and others that operate their own power plants. They perform duties similar to military powerhouse mechanics.

Training Provided

Job training for non-nuclear specialties consists of 12 to 24 weeks of classroom instruction, including practice in repairing power generating equipment. Training length varies depending on the specialty. Course content typically includes:

- Principles of electricity
- Gas and diesel engine theories
- Hydraulic (fluid pressure) and pneumatic (air pressure) system maintenance
- Instrumentation of power generating systems

Nuclear specialties have training programs that last 1 year or more, covering all aspects of nuclear power plant operations. Further training occurs on the job and through advanced courses. The Army offers a certified apprenticeship program for this occupation.

Work Environment

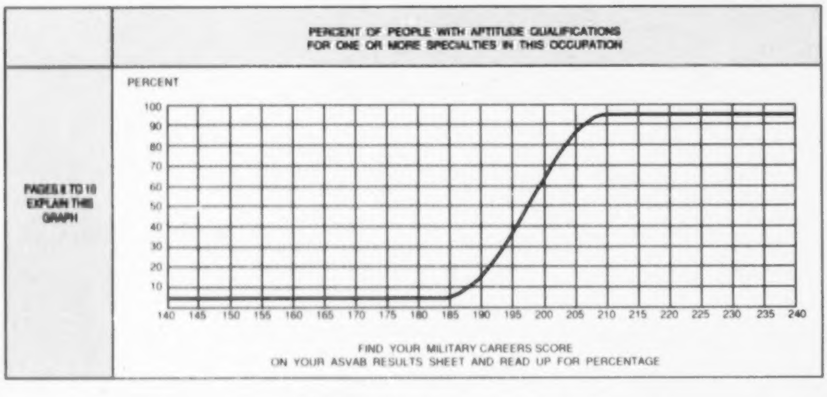
Powerhouse mechanics work in equipment repair shops, power plant stations, or power generating rooms aboard ships. Sometimes they work outdoors while repairing substation generating equipment.

Special Requirements

Nuclear power plant specialties are open only to men and require course work in algebra.

Opportunities

The services have about 5,500 powerhouse mechanics. On average, they need about 300 mechanics each year. After job training, mechanics are assigned routine tasks maintaining and repairing generating equipment under close supervision. With experience, they perform more complex repair work and operate more independently. In time, they may become powerhouse repair crew supervisors or power plant operations managers.



RIGGERS

Navy
Air Force
Marine Corps
Coast Guard

Hoisting devices are used to load and unload ship cargo, such as heavy machinery and supplies. They are also used to move construction materials at job sites. Riggers assemble hoisting devices such as cranes, pulleys, and block and tackle.

What They Do

Riggers in the military perform some or all of the following duties:

- Splice wire and rope cables to make slings and block and tackle devices
- Assemble rigging devices such as cranes and winches
- Select the correct cables, ropes, pulleys, and winches for the size and weight of loads
- Attach grappling devices (for holding cargo) to cranes or winches
- Give hoisting directions to crane and winch operators
- Guide cargo being moved using guide ropes

Helpful Attributes

Helpful attributes include:

- Ability to work closely with others as a member of a team
- Attention to safety requirements
- Preference for doing physical work

Physical Demands

Riggers need strength and endurance to work with heavy equipment and material.

Training Provided

Job training consists of 7 to 12 weeks of classroom instruction, including practice in assembling and using hoisting devices. Course content typically includes:

- Use of rigging devices
- Methods for splicing ropes and cables
- Procedures for assembling hoisting equipment

Further training occurs on the job. The Navy offers a certified apprenticeship program for one specialty in this occupation.

Work Environment

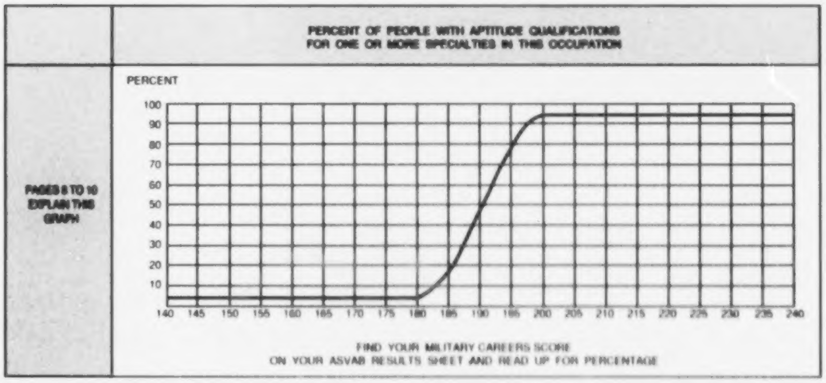
Riggers work inside ships, on docks, and at construction sites.

Civilian Counterparts

Civilian riggers work in shipyards and dockyards. They also work for large construction companies and cargo and pleasure cruise shiplines. Civilian riggers perform duties similar to those of military riggers. They may also be called crane riggers, hook tenders, slingers, and yard riggers.

Opportunities

The services have about 7,000 riggers. On average, they need about 250 new riggers each year. After job training, riggers work under the direction of experienced supervisors. With experience, they may supervise other riggers. In time, they may become superintendents of warehouses or dockyards.



BEST COPY AVAILABLE

Electronic and Electrical Equipment Repairer Occupations

- Aircraft Electricians
- Computer Equipment Repairers
- Electrical Products Repairers
- Electronic Instrument Repairers
- Electronic Weapons Systems Repairers
- Line Installers and Repairers
- Ordnance Mechanics
- Photographic Equipment Repairers
- Power Plant Electricians
- Precision Instrument Repairers
- Radar and Sonar Equipment Repairers
- Radio Equipment Repairers
- Ship Electricians
- Telephone Technicians
- Teletype Repairers

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AIRCRAFT ELECTRICIANS

Army
Navy
Air Force
Marine Corps
Coast Guard

Airplanes and helicopters have complex electrical systems. Instruments, lights, weapons, ignition systems, landing gear, and many other aircraft parts are powered by electricity. Aircraft electricians maintain and repair electrical systems on airplanes and helicopters.

What They Do

Aircraft electricians in the military perform some or all of the following duties:

- Troubleshoot aircraft electrical systems using test equipment
- Repair or replace defective generators and electric motors
- Inspect and maintain electrical systems
- Replace faulty wiring
- Solder electrical connections
- Repair or replace instruments, such as tachometers, temperature gauges, and altimeters
- Read electrical wiring diagrams

Work Environment

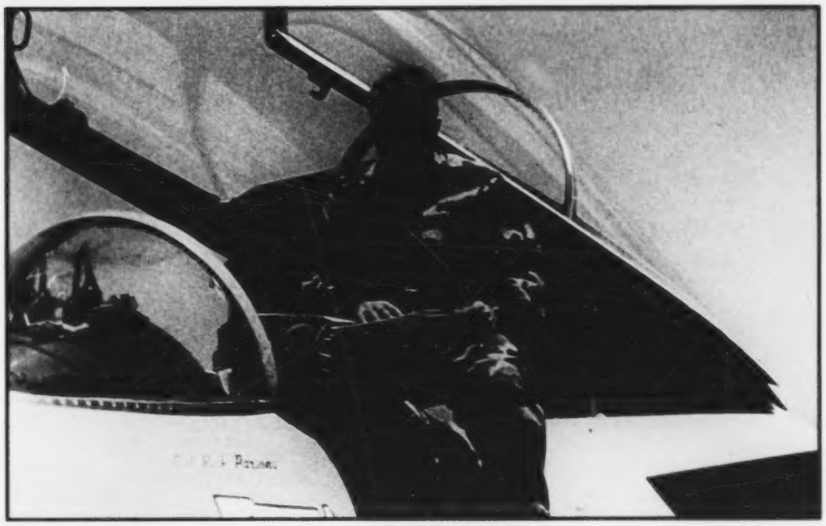
Aircraft electricians usually work indoors, in aircraft hangars, airplanes, and repair shops. They may also work on aircraft parked outdoors.

Training Provided

Job training consists of 18 to 25 weeks of classroom instruction, including practice in repairing electrical systems. Training length varies depending on specialty. Course content typically includes:

- Electrical theory
- Troubleshooting procedures
- Soldering techniques
- Electrical system maintenance

Further training occurs on the job and through advanced courses. The Army and the Navy offer certified apprenticeship programs for one specialty in this occupation.



Helpful Attributes

Helpful school courses include math and shop mechanics. Helpful attributes include:

- Interest in solving problems
- Interest in electricity and how electrical equipment works
- Ability to work with tools

Civilian Counterparts

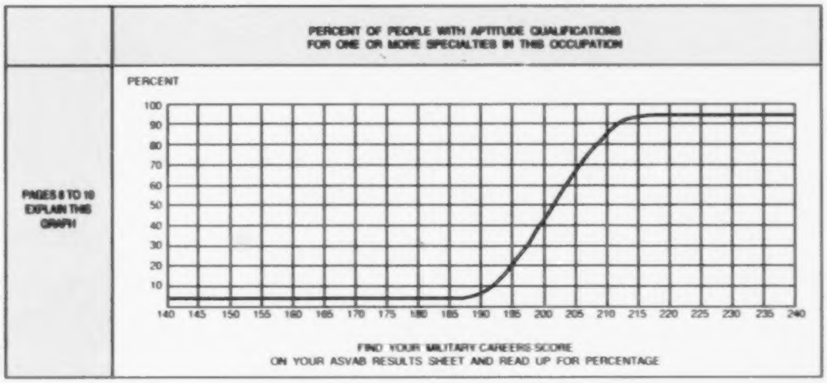
Civilian aircraft electricians work mainly for airlines and aircraft maintenance firms. They may also work for aircraft manufacturers and other organizations that have fleets of airplanes or helicopters. Their duties are similar to those of military aircraft electricians.

Physical Demands

Normal color vision is required to work with color-coded wiring.

Opportunities

The military has about 12,900 aircraft electricians. On average, the services need about 800 new aircraft electricians each year. After job training, aircraft electricians perform maintenance and routine repairs under close supervision. With experience, they are assigned more complicated troubleshooting and repairs and may supervise other electricians. In time, they may become supervisors of aircraft maintenance shops.



COMPUTER EQUIPMENT REPAIRERS

Army
Navy
Air Force
Marine Corps

The military relies on computers to support weapon systems, communications, and administration. Keeping systems "up" is crucial for all military operations. Computer equipment repairers install, test, maintain, and repair computers and related data processing equipment.

What They Do

Computer equipment repairers in the military perform some or all of the following duties:

- Install computers and other data processing equipment
- Inspect data processing equipment for defects in wiring, circuit boards, and other parts
- Test and repair data processing equipment using electrical voltage meters, circuit analyzers, and other special testing equipment
- Locate defective data processing parts using technical guides and diagrams

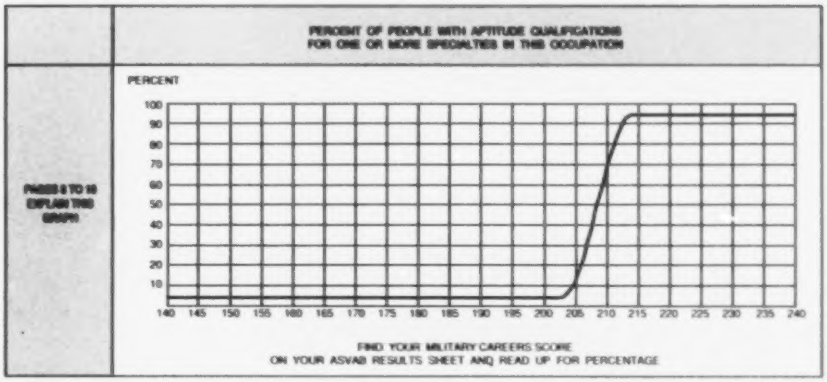
Helpful Attributes

Helpful school subjects include math and electronic equipment repair. Helpful attributes include:

- Interest in working with electrical and electronic equipment

Physical Demands

Specialties that involve flying require passing a special physical exam. Normal color vision is required to work with color-coded wiring.



Work Environment

Computer equipment repairers usually work indoors in repair shops or data processing centers on land or aboard ships. Some specialties involve flying.

Training Provided

Job training consists of 25 to 35 weeks of classroom instruction, including practice in repairing computer equipment. Course content typically includes:

- Electronic principles and concepts
- Operation of various computer systems and equipment
- Use of test equipment
- Repair of data processing equipment

The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian computer equipment repairers work for computer manufacturers, repair services, and other businesses with large computer facilities. They perform duties similar to military computer equipment repairers. They may also be called computer service technicians.

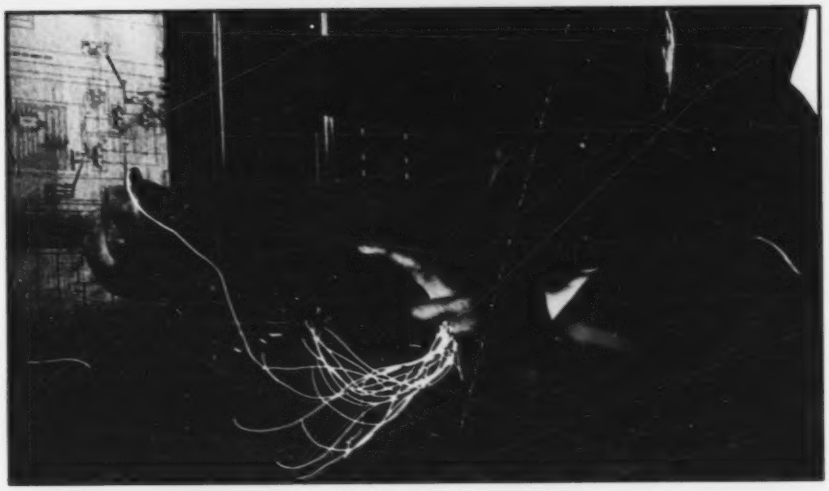
Opportunities

The services have about 8,400 computer equipment repairers. On average, they need about 600 new equipment repairers each year. After job training, repairers are assigned to maintenance units or data processing centers. They perform routine maintenance and simple repair jobs under close supervision. In time, they may perform more difficult repairs and supervise and help train other repair personnel. Eventually, they may become supervisors or managers of computer maintenance departments.

ELECTRICAL PRODUCTS REPAIRERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Much of the military's equipment is electrically powered. Electric motors, electric tools, and medical equipment require careful maintenance and repair. Electrical products repairers maintain and repair electrical equipment. They specialize by type of equipment.



What They Do

Electrical products repairers in the military perform some or all of the following duties:

- Maintain, test, and repair electric motors in many kinds of machines, such as lathes, pumps, office machines, and kitchen appliances
- Inspect and repair electrical, medical, and dental equipment
- Inspect and repair electric instruments, such as voltmeters
- Replace worn gaskets and seals in watertight electrical equipment
- Maintain and repair portable electric tools, such as saws and drills
- Maintain and repair submarine periscopes

Training Provided

Job training consists of 4 to 22 weeks of classroom instruction, including practice in repairing electrical products. Training length varies depending on specialty. Course content typically includes:

- Maintenance and repair procedures
- Use of electrical test equipment

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Work Environment

Electrical products repairers usually work in repair shops on land or aboard ships.

Civilian Counterparts

Civilian electrical products repairers work in many industries, including hospitals, manufacturing firms, and governmental agencies. They also work in independent repair shops. They perform duties similar to military electrical products repairers. They may be called electric tool repairers, electrical instrument repairers, electromedical equipment repairers, or electric motor repairers.

Physical Demands

Normal color vision is required to work with color-coded wiring.

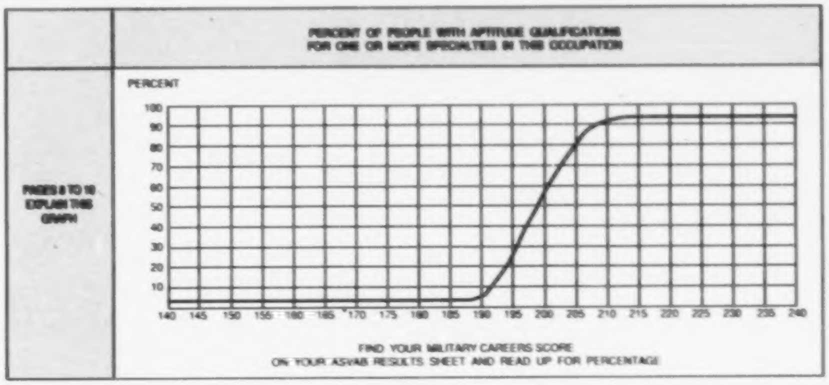
Helpful Attributes

Helpful school subjects include math, electricity, and shop mechanics. Helpful attributes include:

- Ability to use tools
- Interest in electric motors and appliances
- Interest in solving problems

Opportunities

The military has about 6,900 electrical products repairers. On average, the services need about 450 new repairers each year. After job training, they normally make simple repairs under the direction of more experienced workers. With experience, they perform more complicated repairs. In time, repairers may become electrical repair shop supervisors.



ELECTRONIC INSTRUMENT REPAIRERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses electronic instruments in many areas, including health care, weather forecasting, flight control, and combat, to name a few. Electronic instrument repairers maintain and repair electronic instruments, such as precision measuring equipment, navigational controls, photographic equipment, and biomedical instruments. Electronic instrument repairers normally specialize by type of equipment or instrument being repaired. Turn to page 374 for more information about electronic instrument repairers.

What They Do

Electronic instrument repairers in the military perform some or all of the following duties:

- Test meteorological and medical instruments, navigational controls, and simulators using electronic and electrical test equipment
- Read technical diagrams and manuals in order to locate, isolate, and repair instrument parts
- Replace equipment parts such as resistors, switches, and circuit boards

Helpful Attributes

Helpful school subjects include math and electronic equipment repair. Helpful attributes include:

- Interest in working with electronic equipment
- Interest in solving problems
- Attention to detail

Physical Demands

Normal color vision is required to work with color-coded wiring. Some specialties require a minimum age of 18 to enter.

Work Environment

Electronic instrument repairers usually work in repair shops and laboratories.

Training Provided

Job training consists of 15 to 30 weeks of classroom instruction, including practice in repairing and replacing equipment parts. Training length varies depending on specialty. Course content typically includes:

- Principles of electronics
- Use and maintenance of electrical and electronic test equipment
- Equipment repair exercises

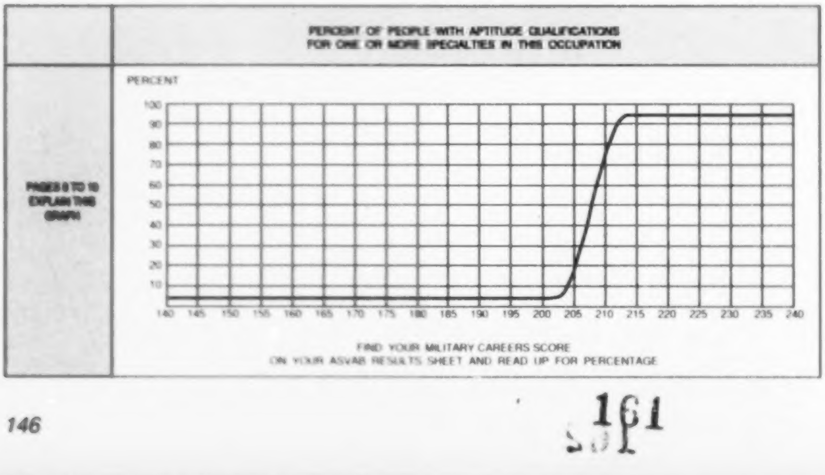
The Navy and the Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Most civilian electronic instrument repairers work for manufacturing, medical research, satellite communications firms, or commercial airlines. They may also work for government agencies, such as the Federal Aviation Administration, the National Aeronautics and Space Administration, or the National Weather Service. They perform the same kind of duties as military instrument repairers. They are called electronics mechanics, dental equipment repairers, or biomedical equipment technicians, depending on their specialty.

Opportunities

The services have about 21,000 electronic instrument repairers. On average, they need about 1,900 new repairers each year. After job training, they are assigned to an operations or equipment maintenance unit. They perform routine maintenance and simple repair jobs. In time, they may perform more difficult repairs and supervise other repair personnel. Eventually, they may become supervisors or managers of electronic equipment maintenance units.



ELECTRONIC WEAPONS SYSTEMS REPAIRERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Most modern military weapons systems have electronic parts. From large ballistic missiles to small field artillery, electronics are used to locate targets, aim weapons, and fire them. Electronic weapons systems repairers maintain and repair electronic and electro-optical weapons systems fired from ships, planes, and ground stations. Turn to page 376 for more information about electronic weapons systems repairers.

What They Do

Electronic weapons systems repairers in the military perform some or all of the following duties:

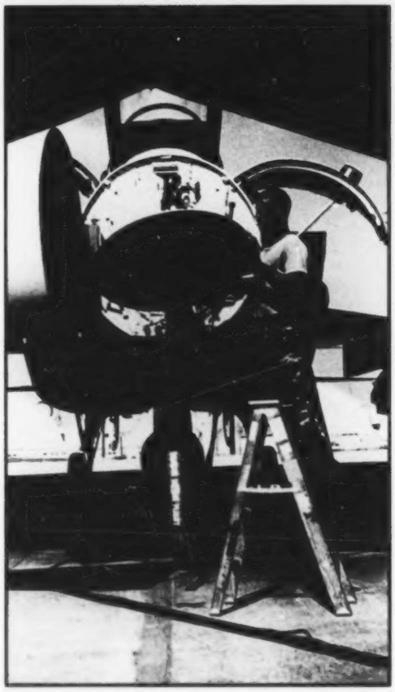
- Install electronic components (parts) in weapons systems
- Test and adjust weapons firing, guidance, and launch systems using electronic test equipment, calibrators, and other precision instruments
- Maintain electronic weapons systems on a regular schedule
- Repair and maintain missile mounts, platforms, and launch mechanisms using hand and power tools
- Clean and lubricate gyroscopes, sights, and other electro-optical fire control components
- Prepare inspection, maintenance, and other repair reports and logs

Training Provided

Job training consists of 15 to 30 weeks of classroom instruction and practical experience. Training length varies depending on specialty. Course content typically includes:

- Electronic and mechanical principles and concepts
- Use of electronic, electrical, and mechanical test equipment
- Use of schematics, drawings, blueprints, and wiring diagrams
- Operation, testing, and maintenance of specific types of weapons systems

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.



Special Requirements

Although there are women weapons systems repairers, some specialties in this occupation are open only to men.

Work Environment

Electronic weapons systems repairers work indoors in workshops when testing and repairing electronic components. They may work outdoors while inspecting and repairing combat vehicles, ships, artillery, aircraft, and missile silos.

Physical Demands

Some specialties involve moderate to heavy lifting. Normal color vision is required to read color-coded charts and diagrams.

Helpful Attributes

Helpful school subjects include science and math. Helpful attributes include:

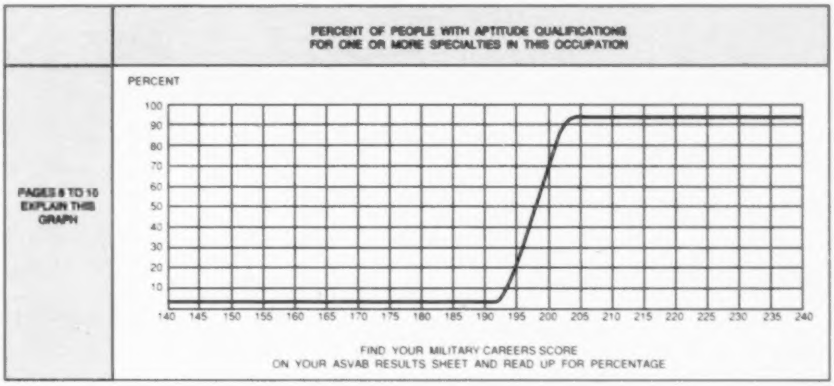
- Interest in working with electronic or electrical equipment
- Ability to do work requiring accuracy and attention to detail

Civilian Counterparts

Civilian electronic weapons systems repairers work for firms that design, build, and test electronic weapons systems for the military. They perform duties similar to military electronic weapons systems repairers. They may also be called electronic mechanics, avionics technicians, or missile facilities repairers.

Opportunities

The services have about 19,800 electronic weapons systems repairers. On average, they need about 2,000 new repairers each year. After job training, they are assigned to electronic weapons operations or maintenance units. They perform routine maintenance and work under close supervision. With experience, they may work more independently and train new personnel. Eventually, they may become managers of missile facilities, avionics, or electronics maintenance units or shops.



LINE INSTALLERS AND REPAIRERS

Army
Navy
Air Force
Marine Corps
Coast Guard

When the military sets up a new base, it installs its own electrical and phone systems. Electrical cables are installed connecting the power plant to buildings and equipment. Likewise, a network of communications lines is installed to provide the base with a telephone system. Line installers and repairers install, maintain, and repair electrical cables and communication lines.

What They Do

Line installers and repairers in the military perform some or all of the following duties:

- Erect utility poles
- Operate mechanical lifts ("cherry pickers") or climb poles to attach conductors and insulators
- String overhead communications and electric cables between utility poles
- Install streetlights and airfield lighting systems
- Operate mechanical plows to dig trenches for underground cables
- Splice and seal cables to keep them watertight
- Install and adjust telephone switchboxes, electrical transformers, and voltage regulators

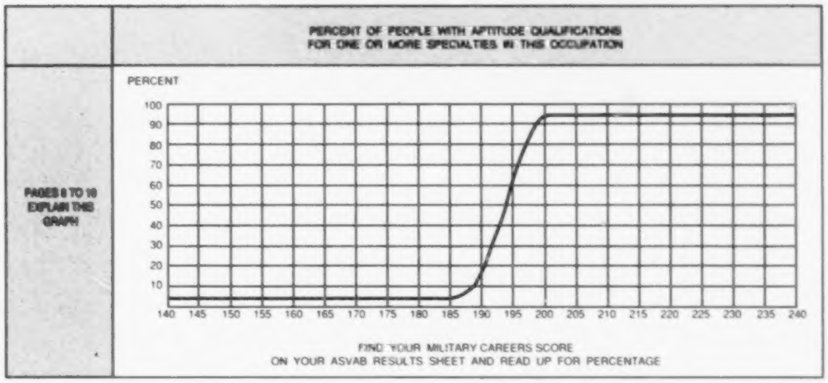
Physical Demands

Line installers and repairers have to climb utility poles and work from heights. They have to lift and work with heavy wires and cables. Normal color vision is required to work with color-coded wires.

Helpful Attributes

Helpful school subjects include math and shop mechanics. Helpful attributes include:

- Ability to work as a member of a team
- Ability to use hand and power tools
- Preference for working outdoors
- Preference for doing physical work



Work Environment

Line installers and repairers work outdoors in all kinds of weather conditions.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction including practice in line installation and repair. Training length varies depending on specialty. Course content typically includes:

- Installation and repair of electric power and telephone lines
- Use of hand and power tools
- Pole climbing techniques and safety procedures

Further training occurs on the job and through advanced courses. The Army offers certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian line installers and repairers work for telephone and power companies. They perform duties similar to military line installers and repairers. They may specialize in certain areas, such as line installing, cable splicing, or cable testing.

Opportunities

The services have about 12,500 line installers and repairers. On average, they need about 2,100 new installers and repairers each year. After job training, workers install and repair lines in teams. With experience, they learn to troubleshoot and perform more difficult repairs. Eventually, they may become construction chiefs or managers of utilities maintenance units.

ORDNANCE MECHANICS

Army
Navy
Air Force
Marine Corps
Coast Guard

Ordnance is a military term for ammunition and weapons. To be effective, weapons must be kept in top working condition. Ammunition must be handled carefully when being moved. Ordnance mechanics keep weapons, ammunition, and related equipment ready for use by combat forces.

What They Do

Ordnance mechanics in the military perform some or all of the following duties:

- Load nuclear and conventional explosives and ammunition on aircraft, ships, and submarines
- Inspect and maintain mounted guns, bomb release systems, and missile launchers
- Repair and maintain tank weapons and fire control systems
- Repair and maintain artillery, naval gun systems, and infantry weapons
- Check the accuracy of radar sighting systems
- Assemble and load explosives
- Defuse unexploded bombs

Training Provided

Job training consists of 15 to 25 weeks of classroom instruction, including practice in ordnance maintenance and repair. Training length varies depending on specialty. Course content typically includes:

- Maintenance, testing, and repair of aircraft weapons systems
- Maintenance of nuclear weapons
- Maintenance and repair of shoulder-fired weapons, machine guns, mortars, and handguns
- Handling, testing, and maintenance of missiles and rockets
- Operation and maintenance of fire control systems on ships

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Physical Demands

Ordnance mechanics may have to lift and carry artillery shells and other heavy ordnance.

Helpful Attributes

Helpful school subjects include general science and shop mechanics. Helpful attributes include:

- Interest in working with guns and explosives
- Ability to remain calm under stress
- Ability to maintain concentration

Special Requirements

Although there are women ordnance mechanics, some specialties in this occupation are open only to men.

Work Environment

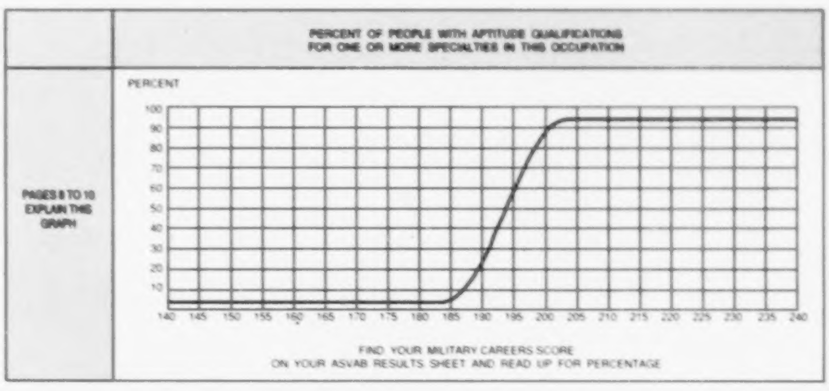
Ordnance mechanics work both indoors and outdoors. They work in repair shops while assembling explosives and repairing weapons. They work outdoors while repairing equipment in the field and loading weapons on tanks, ships, or aircraft.

Civilian Counterparts

There are no direct civilian counterparts for many of the military ordnance mechanics specialties. However, there are many occupations that are related. For example, civilians work for government agencies and private industry doing ordnance research and development. Others work for police or fire departments as bomb-disposal experts. Some also work as gunsmiths or work for munitions manufacturers and firearms makers.

Opportunities

The services have about 62,000 ordnance mechanics. On average, they need about 5,400 new ordnance mechanics each year. After job training, ordnance mechanics work under close supervision. With experience, they work more independently and perform more complex duties. In time, they may become trainers or supervisors. Eventually, they may become managers of weapons maintenance units.



PAVING EQUIPMENT OPERATORS

Army
Navy
Air Force
Marine Corps

The military uses concrete and asphalt to pave its airfields, roads, and sidewalks. Paving equipment operators mix batches of concrete and asphalt and then spread it with paving machines. They also operate rock quarries to make gravel.

What They Do

Paving equipment operators in the military perform some or all of the following duties:

- Operate rock crushers and other quarry equipment to make gravel
- Operate mixing plants to make batches of concrete and asphalt
- Spread asphalt and concrete with paving machines
- Operate pavement rollers to smooth asphalt surfaces
- Inspect pavement for damage or wear
- Patch worn pavement
- Take samples and test asphalt or concrete quality

Training Provided

Job training consists of 4 to 8 weeks of classroom instruction, including practice in operating paving equipment. Training length varies depending on specialty. Course content typically includes:

- Concrete and asphalt paving
- Road and runway repair and maintenance
- Operation and care of paving equipment

Physical Demands

Some specialties require heavy lifting.

Work Environment

Paving equipment operators work outdoors in all kinds of weather conditions.

Helpful Attributes

Helpful school subjects include science and shop mechanics. Helpful attributes include:

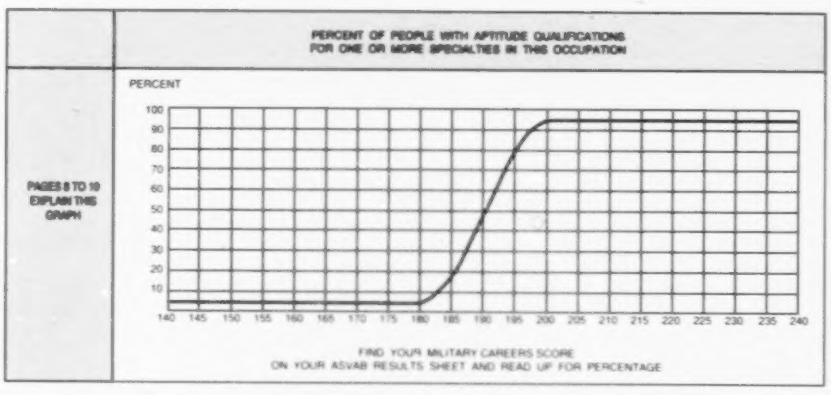
- Preference for working outdoors
- Interest in working with large machines and equipment

Civilian Counterparts

Civilian paving equipment operators work for construction companies, paving contractors, and state highway agencies. They perform duties similar to military paving equipment operators.

Opportunities

The services have about 2,300 paving equipment operators. On average, they need about 300 new paving equipment operators each year. After job training, paving equipment operators are assigned to pavement maintenance units, where they perform routine tasks as paving crew members. With experience operating paving equipment, they may become crew leaders and help train new workers. Eventually, paving equipment operators have the opportunity to become maintenance supervisors or construction superintendents.



PHOTOGRAPHIC EQUIPMENT REPAIRERS

Army
Navy
Air Force
Marine Corps

The photographic equipment used by the military has many sensitive mechanisms. Still cameras, motion picture cameras, and darkroom equipment need regular attention to stay in working order. Photographic equipment repairers adjust and repair military cameras and photoprocessing equipment.

What They Do

Photographic equipment repairers in the military perform some or all of the following duties:

- Adjust and repair camera shutter mechanisms, focus controls, and flash units
- Maintain and repair aerial cameras mounted in airplanes
- Maintain aerial sensors that detect foreign military activities
- Maintain and repair motion picture cameras and sound recording equipment
- Repair photoprocessing equipment such as enlargers, film processors, and printers
- Diagnose problems in all types of cameras

Work Environment

Photographic equipment repairers work in repair shops on land or aboard ships.

Physical Demands

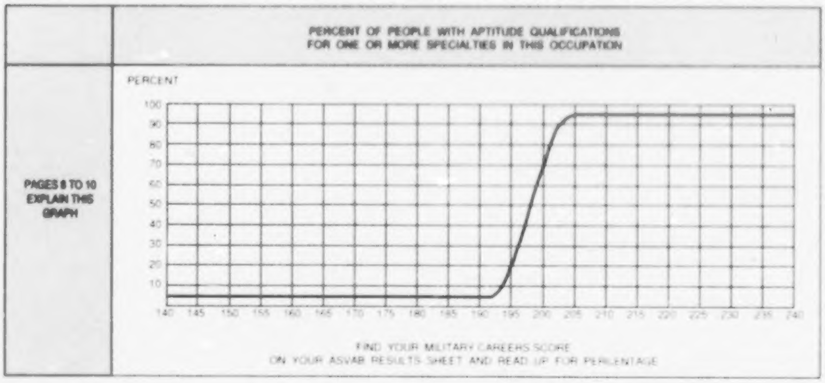
Normal color vision is required to work with color-coded wiring.

Training Provided

Job training consists of 9 to 32 weeks of classroom instruction including practice in repairing photographic equipment. Training length varies depending on specialty. Course content typically includes:

- Test and repair of still cameras and darkroom equipment
- Maintenance and repair of motion picture cameras, tape recorders, synchronizers, and similar equipment
- Test and repair of aerial sensor equipment

Further training occurs on the job and through advanced courses. The Army and Navy offer certified apprenticeship programs for some specialties in this occupation.



Helpful Attributes

Helpful school subjects include math and science. Helpful attributes include:

- Interest in solving problems
- Ability to use repair tools

Civilian Counterparts

Civilian photographic equipment repairers work for photographic laboratories, engineering firms, and government agencies. They perform duties similar to those performed in the military. Depending on specialty, they may also be called camera repairers, motion picture equipment machinists, or photographic equipment technicians.

Opportunities

The services have about 2,000 photographic equipment repairers. On average, they need about 200 new photographic equipment repairers each year. After job training, photographic equipment repairers make routine adjustments and simple repairs under close supervision. In time, they make more difficult repairs and may supervise others. Eventually, they may become chiefs of one or more military photographic labs.

POWER PLANT ELECTRICIANS

Army
Navy
Air Force
Marine Corps
Coast Guard

Each military base—anywhere in the world—must have its own electricity. Power plant electricians maintain and repair electricity generating equipment in mobile and stationary power plants.

What They Do

Power plant electricians perform some or all of the following duties:

- Maintain and repair motors, generators, switchboards, and control equipment
- Maintain and repair power and lighting circuits, electrical fixtures, and other electrical equipment
- Detect and locate grounds, open circuits, and short circuits in power distribution cables
- Connect emergency power to the main control board from an emergency switchboard
- Operate standard electrical and electronic test equipment
- Read technical guides and diagrams to locate damaged parts of generators and control equipment

Work Environment

Power plant electricians work in repair shops on land, aboard ships, or wherever generating equipment needing repair is located.

Training Provided

Job training consists of 4 to 17 weeks of classroom instruction, including practice in maintaining electrical power systems. Course length varies depending on specialty. Course content typically includes:

- Generator and power plant operations
- Electrical generation and distribution
- Diesel generator operation, disassembly, inspection, and maintenance
- Principles of electrical and electronic circuitry

Further training occurs on the job and through advanced courses. The Army offers certified apprenticeship programs for one specialty in this occupation.

Special Requirements

Although there are women power plant electricians, some specialties in this occupation are open only to men.

Physical Demands

Normal color vision is required to work with color-coded wiring.

Helpful Attributes

Helpful school subjects include electrical and electronic theory, math, and technical drawing. Helpful attributes include:

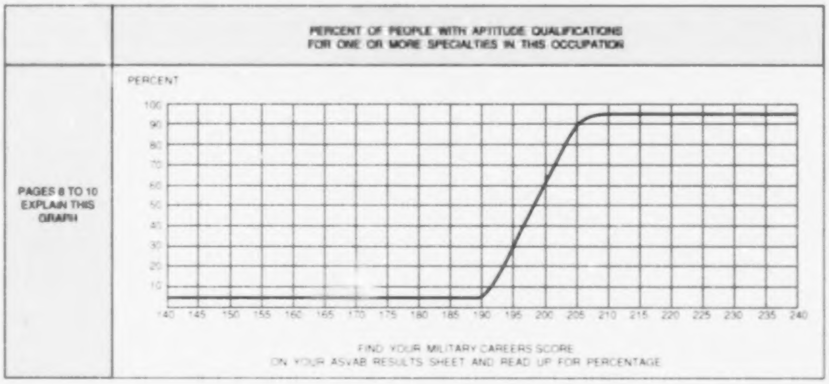
- Ability to use hand and power tools
- Interest in working with large machinery
- Interest in electricity

Civilian Counterparts

Civilian power plant electricians often work for construction companies, manufacturers, and utility companies. They perform duties similar to military power plant electricians.

Opportunities

The services have about 1,600 power plant electricians. On average, they need about 100 new power plant electricians each year. After job training, power plant electricians perform routine maintenance and repairs under supervision. In time, they perform more complex tasks and may help train others. Eventually, they may become supervisors of power plant operations.



PRECISION INSTRUMENT REPAIRERS

Army
Navy
Air Force
Marine Corps

Precision instruments are measuring devices. They can be as simple as a thermometer or as complex as a gyrocompass. Precision instruments are used by the military to measure distance, pressure, altitude, underwater depth, and many other physical properties. Precision instrument repairers keep measuring devices in good working order. They calibrate (adjust) gauges and meters to give correct readings.

What They Do

Precision instrument repairers in the military perform some or all of the following duties:

- Calibrate weather instruments, such as barometers and thermometers
- Repair gyrocompasses
- Adjust and repair weapon-aiming devices, such as range finders, telescopes, periscopes, and ballistic computers
- Calibrate engineering instruments, such as transits, levels, telemeters, and stereoscopes
- Calibrate and repair instruments used in aircraft
- Repair watches, clocks, and timers
- Calibrate electrical test instruments

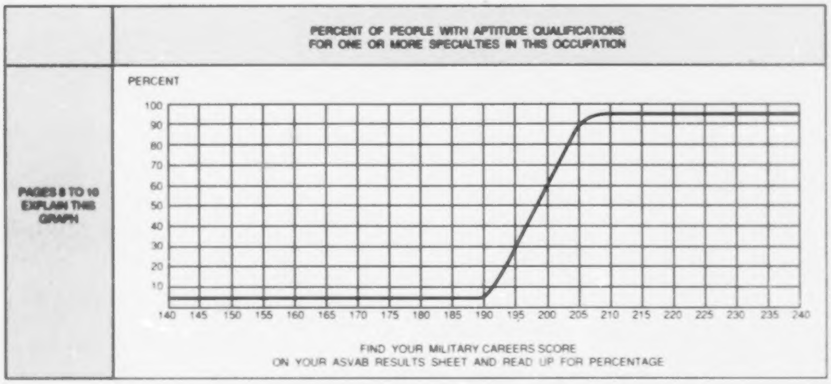
Work Environment

Precision instrument repairers usually work in repair shops on land or aboard ships.

Helpful Attributes

Helpful school subjects include math, science, electronics, and shop mechanics. Helpful attributes include:

- Interest in machines and how they work
- Ability to solve mechanical problems
- Ability to work with tools



Physical Demands

Normal color vision is required to work with color-coded wiring and repair manuals.

Training Provided

Job training consists of 12 to 34 weeks of classroom instruction, including practice in repairing precision instruments. Training length varies depending on specialty. Course content typically includes:

- Calibration and repair of precision measuring instruments
- Use of blueprints and schematics

The Army and Navy offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian precision instrument repairers work for firms that manufacture or use precision instruments. These include manufacturing firms, airlines, machinery repair shops, maintenance shops, and instrument makers. Civilian precision instrument repairers perform duties similar to military precision instrument repairers. They may also be called instrument mechanics or calibration specialists.

Opportunities

The services have about 8,500 precision instrument repairers. On average, they need 700 new precision instrument repairers each year. After job training, precision instrument repairers calibrate instruments under the direction of supervisors. With experience, they perform more complicated repairs and may supervise others. In time, precision instrument repairers may become managers of instrument repair shops.

RADAR AND SONAR EQUIPMENT REPAIRERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Radar and sonar equipment locates objects by bouncing radio and sound waves off them. This equipment is used to detect and track enemy ships, planes, and missiles. It is also used for ship and plane navigation and weather observation. Radar and sonar equipment repairers install, maintain, repair, and operate sonar and radar equipment. Turn to page 392 for more information about radar and sonar equipment repairers.

What They Do

Radar and sonar equipment repairers perform some or all of the following duties:

- Test radar systems using electronic and electrical test equipment
- Monitor the operation of air traffic control, missile tracking, air defense, and other radar systems to make sure there are no problems
- Repair sonar and radar components (parts), using soldering irons and other special hand and power tools
- Install receivers, transmitters, and other components using technical manuals and guides
- Read wiring diagrams, designs, and other drawings to locate parts and components of radar equipment

Physical Demands

Specialties involving flying require passing a special physical exam. Normal color vision is required to work with color-coded wiring.

Helpful Attributes

Helpful school subjects include math and physics. Helpful attributes include:

- Interest in working with electrical and electronic equipment
- Ability to apply electronic principles and concepts

Work Environment

Radar and sonar equipment repairers work in repair shops and laboratories on land or aboard ships. Some specialties involve flying.

Special Requirements

Although there are women radar and sonar equipment repairers, some specialties in this occupation are open only to men.

Training Provided

Job training consists of 20 to 30 weeks of classroom instruction, including practice in repairing radar and sonar equipment. Course content typically includes:

- Application of electronic principles and concepts
- Inspection techniques and procedures
- Use of electrical and electronic test equipment
- Repair and replacement of radar and sonar equipment

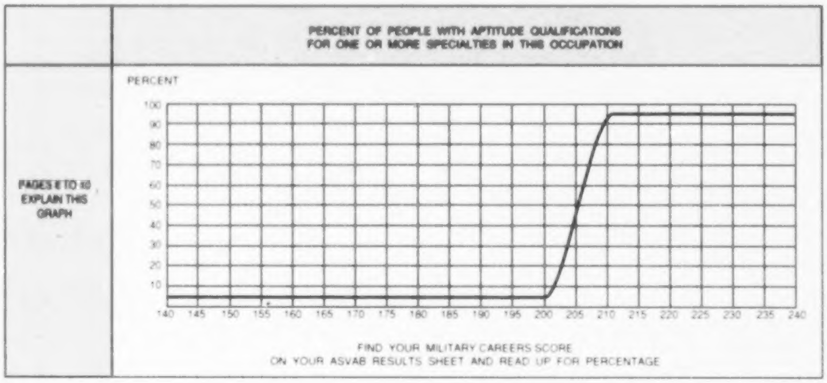
The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian radar and sonar equipment repairers work for engineering firms, the federal government, or aircraft and military hardware manufacturers. They perform duties similar to military radar and sonar equipment repairers. They may also be called communications technicians.

Opportunities

The services have about 24,900 radar and sonar equipment repairers. On average, they need about 1,400 new equipment repairers each year. After job training, radar and sonar equipment repairers are assigned to a radar or sonar maintenance unit. They perform routine maintenance and simple repair jobs under close supervision. In time, they may perform more difficult repairs and supervise others. Eventually, they may become managers or chiefs of communications units or avionics maintenance shops.



PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH

FIND YOUR MILITARY CAREERS SCORE ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

RADIO EQUIPMENT REPAIRERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military relies on radio equipment to communicate between ground, sea, and air forces. Through radio, the military can track and direct troop, aircraft, and ship movements. Radio equipment repairers install, maintain, and repair radio communication equipment. Turn to page 396 for more information about radio equipment repairers.

What They Do

Radio equipment repairers perform some or all of the following duties:

- Maintain, test, and repair radio equipment in broadcasting and relay stations, tanks, ships, and aircraft
- Maintain, repair, and replace circuitry, frequency controls, and other radio parts using special hand and power tools
- Adjust, tune, and gauge microwave, satellite, aircraft, and other radio equipment using electronic testing equipment
- Locate and isolate defective parts of radio equipment using technical guides and diagrams

Work Environment

Radio equipment repairers usually work in repair shops and laboratories. They may work in the field when making repairs on mobile radio equipment.

Special Requirements

Although there are women radio equipment repairers, some specialties in this occupation are open only to men.

Training Provided

Job training consists of 25 to 40 weeks of classroom instruction, including practice in repairing radio equipment. Course content typically includes:

- Electronic principles and concepts
- Radio equipment repair
- Preventive maintenance procedures
- Communication security policies and procedures

The Army, Navy, and Marine Corps offer certified apprenticeship training programs for some specialties in this occupation.

Physical Demands

Normal color vision is required to work with color-coded wiring.

Helpful Attributes

Helpful school subjects include algebra and radio and television repair. Helpful attributes include:

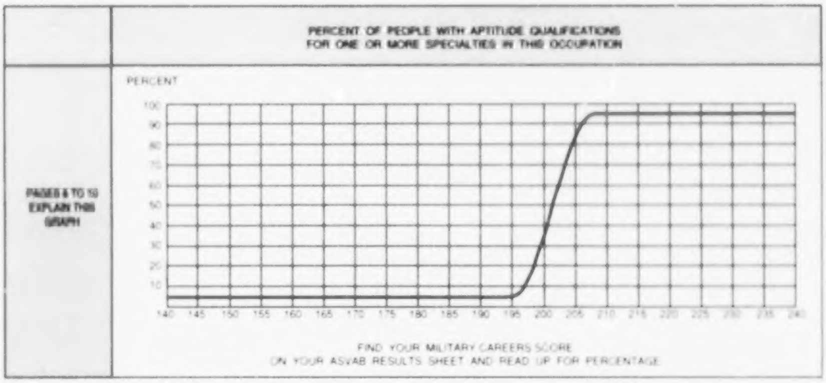
- Interest in working with electrical and electronic equipment
- Interest in solving problems

Civilian Counterparts

Civilian radio equipment repairers often work for firms that design and make aerospace communications and electronic equipment. They may also work for the federal government. They perform duties similar to military radio equipment repairers. They may be called radio repairers, radio mechanics, or radio electricians.

Opportunities

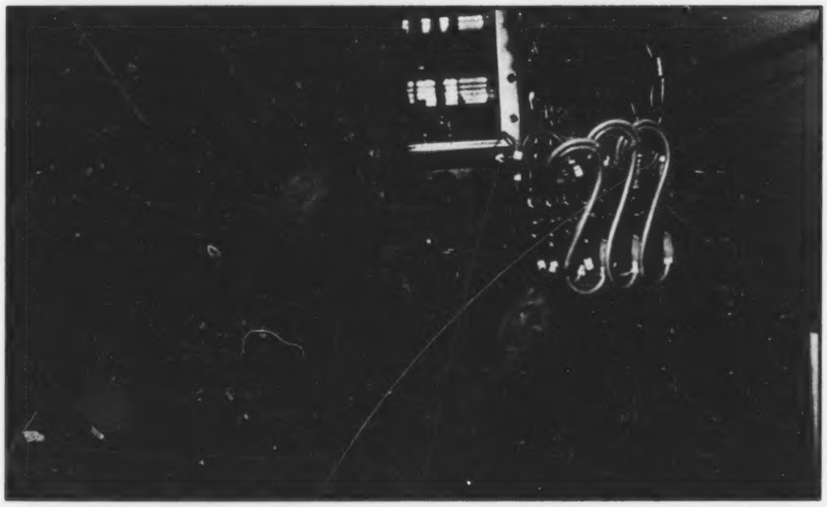
The services have about 57,500 radio equipment repairers. On average, the services need about 4,600 new repairers each year. After job training, repairers are assigned to a radio maintenance unit and perform routine maintenance and simple repair jobs under close supervision. In time, they may perform more difficult repairs and train and supervise other repair personnel. Eventually, they may become managers or chiefs of communications units or maintenance shops.



SHIP ELECTRICIANS

Navy
Coast Guard

Electrical systems supply power to operate ships and submarines. Lights, radar, weapons, laundry and cooking appliances, and machinery all need electricity. Ship electricians operate and repair electrical systems on ships. They keep electrical power plants, wiring, and machinery in working order.



What They Do

Ship electricians in the military perform some or all of the following duties:

- Install wiring for lights and equipment
- Troubleshoot electrical wiring and equipment using test meters
- Inspect and maintain devices that distribute electricity throughout ships, such as circuits, transformers, and regulators
- Monitor and maintain electrical devices connected to the ship's main engines or nuclear reactors
- Repair motors and appliances

Special Requirements

Nuclear specialties are open only to men and require successful completion of high school algebra.

Training Provided

Job training for non-nuclear specialists consists of 18 to 25 weeks of classroom instruction, including practice repairing electrical systems. Course content typically includes:

- Electrical theory
- Troubleshooting procedures
- Maintenance and repair procedures
- Reading diagrams and calculating amperage, voltage, and resistance levels

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school courses include math and shop mechanics. Helpful attributes include:

- Interest in electricity and how electrical machines work
- Interest in solving problems
- Ability to use tools

Work Environment

Ship electricians usually work indoors, aboard ships or submarines. They also work in ship repair shops on land.

Physical Demands

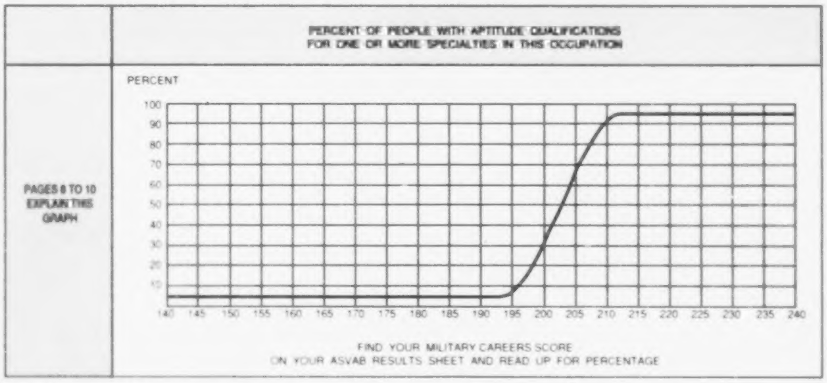
Normal color vision is required to work with color-coded wiring.

Civilian Counterparts

Civilian ship electricians work for shipbuilding and drydock firms and shipping lines. They perform duties similar to military ship electricians. Other civilian electricians, such as building electricians and electrical products repairers, also perform similar work. Civilian nuclear power plant electricians perform duties similar to ship electricians who work with nuclear plants on ships and submarines.

Opportunities

The military has about 10,300 ship electricians. On average, the services need about 500 new ship electricians each year. After job training, ship electricians perform maintenance work and repair electrical problems. Eventually, they may become superintendents of electrical repair shops or of ship electrical systems.



TELEPHONE TECHNICIANS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military operates its own telephone systems to send messages and orders. Phones are used on military bases, ships, and in the field. Telephone technicians install, maintain, and repair military telephone systems.

What They Do

Telephone technicians in the military perform some or all of the following duties:

- Determine the cause of equipment failure
- Install interior wiring and switching equipment
- Connect telephones and switchboards
- Check telephone equipment using test meters
- Repair or replace broken equipment
- Repair short circuits in wiring
- Read wiring diagrams to determine installation steps

Training Provided

Job training consists of 10 to 38 weeks of classroom instruction, including practice in installing and repairing telephone systems. Training length varies depending on specialty. Course content typically includes:

- Repair of office telephone systems
- Wiring installation techniques

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Physical Demands

Telephone technicians may have to work from ladders or on tall utility poles. Normal color vision is required to work with color-coded wiring and diagrams.

Helpful Attributes

Helpful school courses include math, electricity, and shop mechanics. Helpful attributes include:

- Ability to use hand tools
- Interest in solving problems
- Interest in learning how telephone systems work

Work Environment

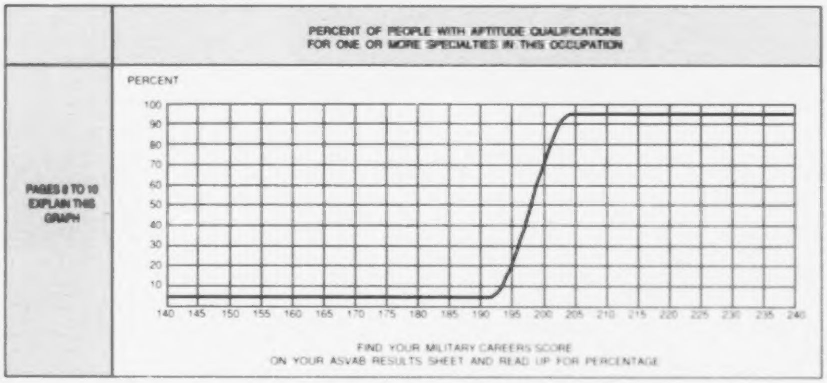
Telephone technicians work indoors when installing or repairing interior wiring and telephone equipment. They work outdoors when connecting communications lines to utility poles or underground terminals.

Civilian Counterparts

Most civilian telephone technicians work for telephone companies. They perform duties similar to military telephone technicians, although they usually specialize in either installation or repair. They may be called central office repairers, PBX repairers, central office installers, station installers and repairers, or telephone maintenance mechanics, depending on specialty.

Opportunities

The military has about 8,800 telephone technicians. On average, they need about 1,200 new telephone technicians each year. After job training, telephone technicians install and repair telephones under the direction of supervisors. With experience, they may become supervisors of other telephone technicians. Eventually, they may become superintendents of communications centers.



TELETYPE REPAIRERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military depends on teletype and cryptographic machines to link air, sea, and ground forces during operations. If equipment breaks down during military operations, it must be repaired immediately. Teletype repairers install, maintain, and repair teletype communications equipment.

What They Do

Teletype repairers perform some or all of the following duties:

- Test and repair communications equipment using frequency meters, circuit analyzers, and other electrical and electronic test equipment
- Monitor operation of cryptographic (coded message) systems, terminals, and teletypewriters
- Read wiring diagrams and technical manuals
- Install and repair circuits and wiring using soldering irons and hand tools
- Calibrate and align equipment components using scales, gauges, and other measuring instruments

Training Provided

Job training consists of 20 to 30 weeks of classroom instruction, including practice repairing various types of cryptographic and teletype equipment. Course content typically includes:

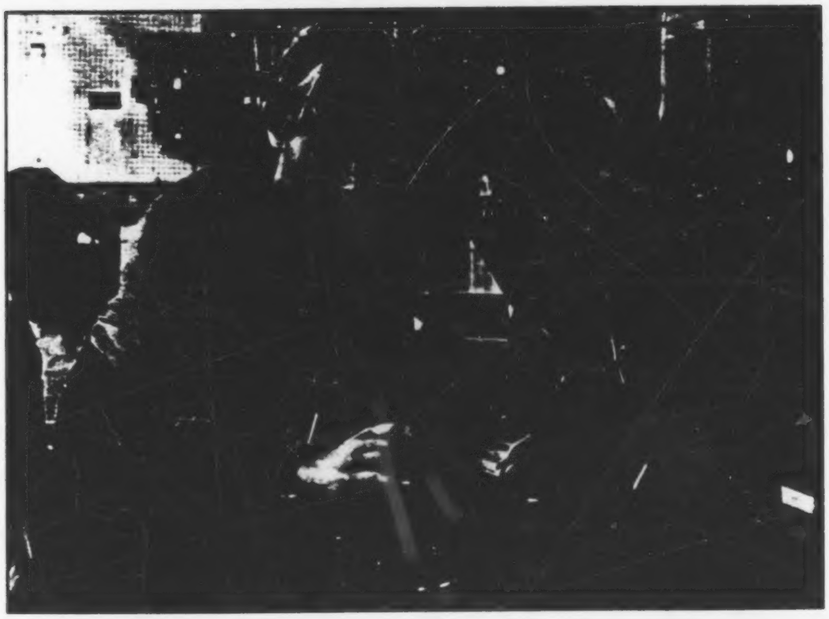
- Application of electronic and mechanical concepts
- Fundamentals of electronic communications security
- Use and maintenance of test equipment

The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Helpful Attributes

Helpful school subjects include math and electronic equipment repair. Helpful attributes include:

- Interest in working with electromechanical equipment
- Interest in solving problems



Work Environment

Teletype repairers usually work indoors in repair shops and laboratories.

Physical Demands

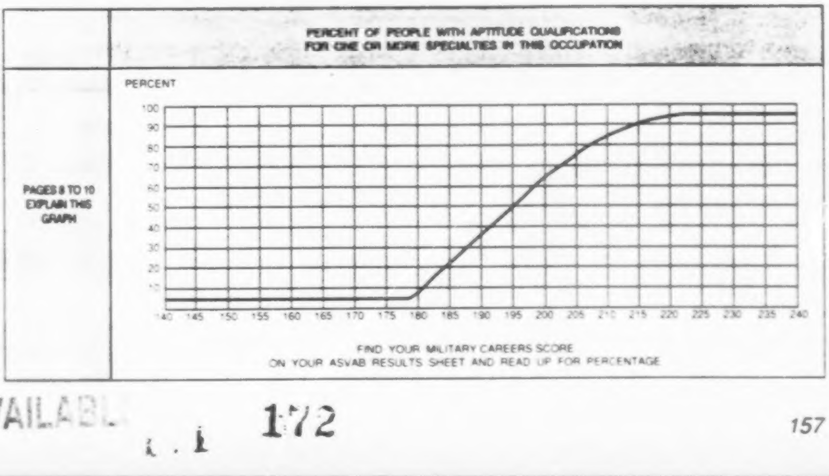
Normal color vision is required to work with color-coded wiring.

Civilian Counterparts

Most civilian teletype repairers work for electronic communications equipment manufacturers and firms providing teletype and communications equipment maintenance service. They perform duties similar to military teletype repairers.

Opportunities

The services have about 11,600 teletype and cryptographic equipment repairers. On average, they need about 750 new equipment repairers each year. After job training, new equipment repairers are assigned to a fixed or mobile communications unit. They perform routine maintenance and simple repair jobs under close supervision. With experience, they perform more difficult tasks and may help train new personnel. Eventually, they may become managers or chiefs of maintenance in communications centers or electronics maintenance shops.



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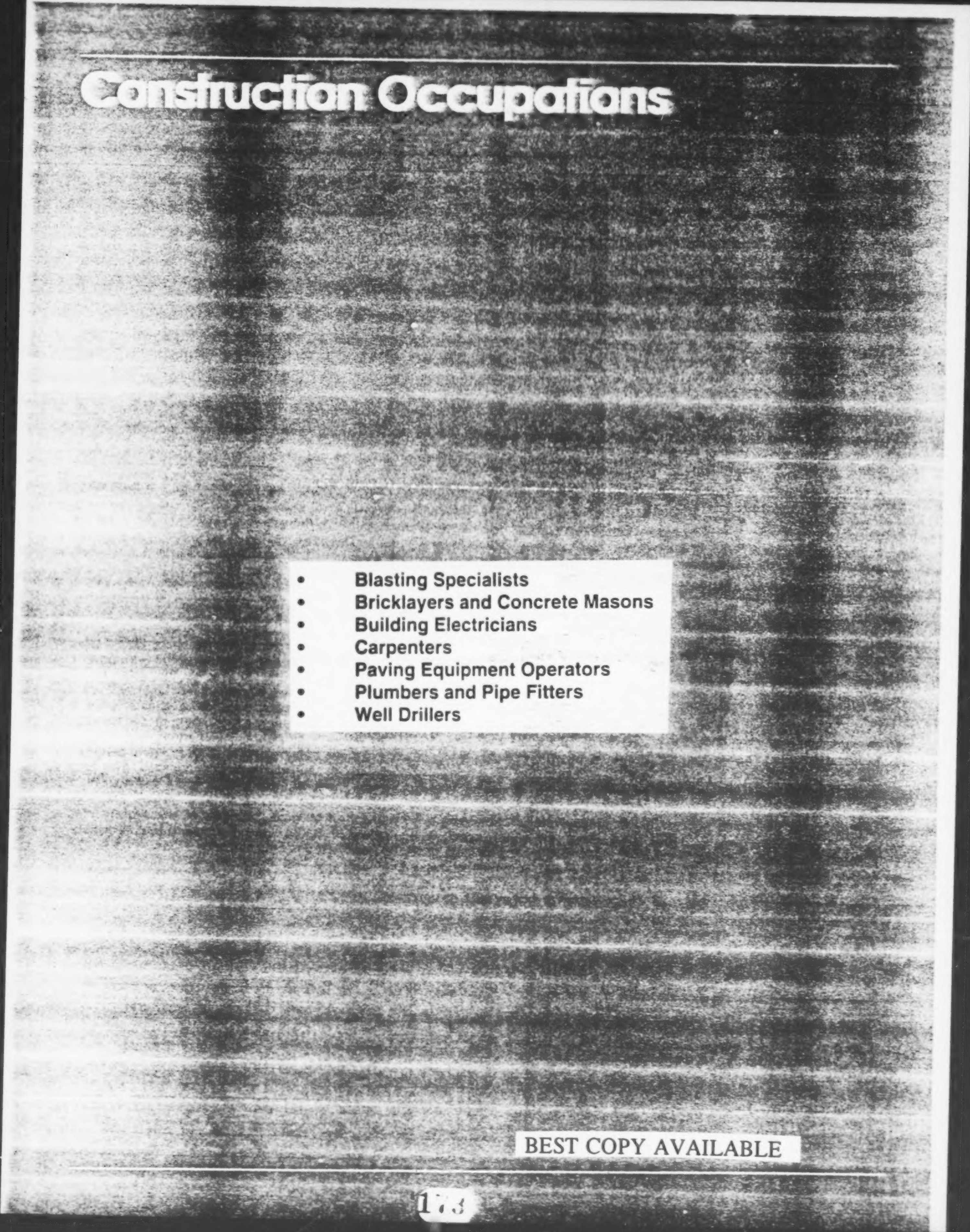
Construction Occupations



- Blasting Specialists
- Bricklayers and Concrete Masons
- Building Electricians
- Carpenters
- Paving Equipment Operators
- Plumbers and Pipe Fitters
- Well Drillers

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BLASTING SPECIALISTS

Army
Navy
Air Force
Marine Corps

Using explosives instead of machines can save time in excavating and quarrying work. Blasting specialists use explosives to clear rock and earth from construction sites. They also loosen rock in quarries to make gravel for paving.

What They Do

Blasting specialists in the military perform some or all of the following duties:

- Determine the amount of explosives required for each job
- Transfer explosives from magazines (storage) to blasting areas
- Determine the placement of explosives for the safest and most efficient results
- Drill holes in rocks, tree stumps, or structures at the proper depth and spacing
- Select explosives and assemble charges, fuses, and blasting caps
- Place explosives in drilled holes and detonate using electric detonators
- Oversee the storage of explosives
- Keep records of explosives used

Work Environment

Blasting specialists work outdoors at construction sites or quarries.

Training Provided

Job training consists of 6 to 10 weeks of classroom instruction, including practice in working with explosives. Training length varies depending on specialty. Course content typically includes:

- Types of explosives and blasting materials
- Safety procedures
- Methods of placing explosive charges
- Storing and transporting explosives

Further training occurs on the job. The Army, Navy, and Marine Corps offer certified apprenticeship programs for this occupation.

Helpful Attributes

Helpful school subjects include science and math. Helpful attributes include:

- Emotional stability
- Ability to stay calm under pressure
- Ability to observe strict safety procedures

Physical Demands

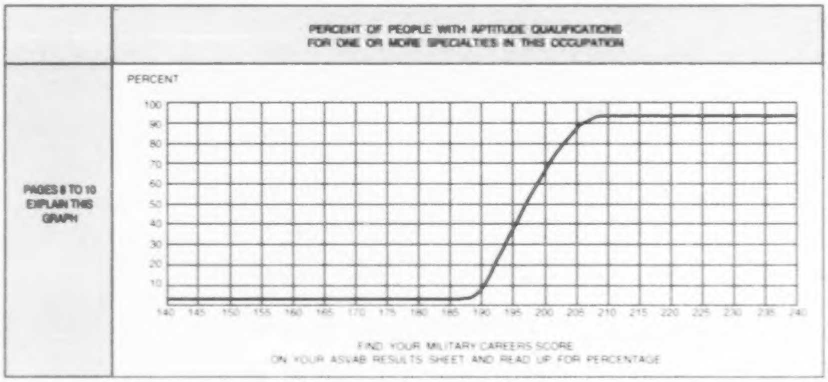
Some specialties require that workers have no history of heart or vascular problems because of the stress of working with explosives. Normal hearing and color vision are required to work with explosives.

Civilian Counterparts

Civilian blasting specialists work for construction companies or rock quarries. They perform duties similar to military blasting specialists and are commonly called blasters.

Opportunities

The services have about 1,500 blasting specialists. On average, they need about 200 new specialists each year. After job training, blasting specialists work under close supervision. With experience, they work more independently and may help train new specialists. In time, they may become construction superintendents.



BRICKLAYERS AND CONCRETE MASONS

Army
Navy
Air Force
Marine Corps

The military uses concrete and masonry (bricks, stone, and concrete blocks) in many of its building projects. Concrete is used for foundations, dams, bridges, and bunkers. Brick, stone, and block are used in constructing buildings, walls, and fences. Bricklayers and concrete masons build and repair all types of structures made of concrete and masonry. They work with engineers and other building specialists as part of construction teams.

What They Do

Bricklayers and concrete masons in the military perform some or all of the following duties:

- Build foundations and walls, with brick, cement block, or stone
- Set masonry in correct position using mortar
- Cut and shape masonry using power saws, chisels, and hammers
- Mix and pour concrete to form footings, foundations, and floor slabs
- Finish surfaces of poured concrete using finishing tools, such as floats, screeds, and edgers
- Plaster inside walls and ceilings
- Set ceramic tile on walls and floors

Helpful Attributes

Helpful attributes include:

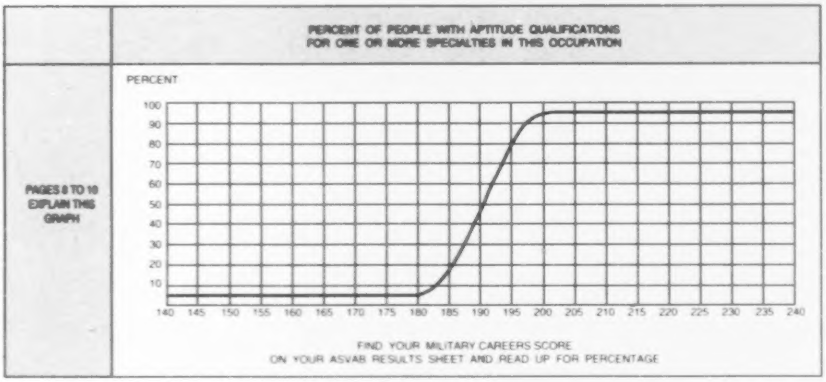
- Preference for doing physical work
- Ability to work with blueprints
- Preference for working outdoors

Training Provided

Job training consists of 5 to 8 weeks of classroom instruction, including practice in working with tools and materials. Course content typically includes:

- Use and care of masonry tools and equipment
- How to mix concrete, mortar, and plaster
- Methods of pouring concrete
- Masonry construction methods

The Navy offers a certified apprenticeship program for one specialty in this occupation.



Physical Demands

Bricklayers and concrete masons work with relatively heavy materials. Sometimes they are required to climb and work from ladders and scaffolds.

Work Environment

Bricklayers and concrete masons work indoors and outdoors on construction sites.

Civilian Counterparts

Civilian bricklayers and concrete masons work for construction firms and as independent contractors. They perform duties similar to military bricklayers and concrete masons. They may also be called brickmasons, stonemasons, cement masons, or cement finishers.

Opportunities

The military has about 3,900 bricklayers and concrete masons. On average, the services need about 500 new bricklayers and masons each year. After job training, bricklayers and masons work on construction projects under close supervision. With experience, they work more independently and may supervise others. In time, bricklayers and concrete masons have the opportunity to become construction superintendents.

BUILDING ELECTRICIANS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses electricity to do many jobs, including lighting hospitals, running power tools, and operating computers. Building electricians install and repair electrical wiring systems in offices, repair shops, airplane hangars, and other buildings on military bases.

What They Do

Building electricians in the military perform some or all of the following duties:

- Install and wire transformers, junction boxes, and circuit breakers, using wire cutters, insulation strippers, and other hand tools
- Read blueprints, wiring plans, and repair orders to determine wiring layouts or repair needs
- Cut, bend, and string wires and conduits (pipe or tubing)
- Inspect power distribution systems, shorts in wires, and faulty equipment using test meters
- Repair and replace faulty wiring and lighting fixtures
- Install lightning rods to protect electrical systems

Helpful Attributes

Helpful school subjects include science and math. Helpful attributes include:

- Ability to use hand tools
- Preference for doing physical work
- Interest in electricity

Work Environment

Building electricians usually work indoors while installing wiring systems. They work outdoors while installing transformers and lightning rods.

Physical Demands

Normal color vision is required for working with color-coded wiring and circuits.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction, including practice in the installation and repair of electrical wiring systems. Course content typically includes:

- Fundamentals of electricity
- Electrical circuit troubleshooting
- Safety procedures
- Techniques for wiring switches, outlets, and junction boxes

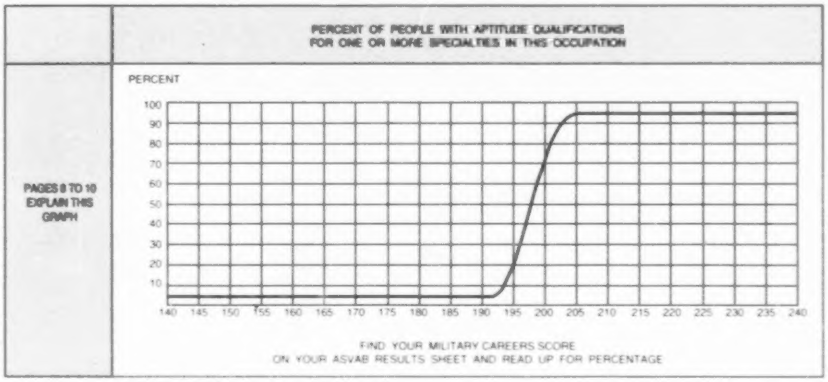
Further training occurs on the job and through advanced courses. The Army and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian building electricians usually work for building and electrical contracting firms. Some work as self-employed electrical contractors. They perform duties similar to military building electricians.

Opportunities

The military has about 1,600 building electricians. On average, the services need about 200 new electricians each year. After job training, building electricians work under close supervision. As they gain experience, building electricians work more independently. In time, they may be promoted to supervisors of one or more work crews. Eventually, they may become construction superintendents.



CARPENTERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military builds many temporary and permanent structures each year. Lumber, plywood, plasterboard, and similar materials are the basic building materials for many of these projects. Carpenters build and repair buildings, bridges, and other wooden structures. They work with engineers and other building specialists on military construction projects. Turn to page 370 for more information about carpenters.

What They Do

Carpenters in the military perform some or all of the following duties:

- Erect wood framing for buildings using hand and power tools, such as hammers, saws, levels, and drills
- Lay roofing materials, such as roofing felt and asphalt, tile, and wooden shingles
- Install plasterboard and paneling to form interior walls and ceilings
- Lay wood and tile floors and build steps, staircases, and porches
- Operate precision power tools, such as drill presses, table saws, and lathes
- Build temporary shelters for storing supplies and equipment while on training maneuvers

Physical Demands

Carpenters may have to lift and carry heavy building materials, such as lumber and plasterboard. Also, they may have to climb and work from ladders and scaffolding.

Helpful Attributes

Helpful school subjects include math, woodworking, and industrial arts. Helpful attributes include:

- Preference for physical work
- Ability to use woodworking tools
- Interest in construction work

Work Environment

Carpenters work in woodworking shops, which can be dusty and noisy. They also work inside buildings, laying floors and installing plasterboard walls. Carpenters sometimes work outdoors, constructing temporary buildings.

Training Provided

Job training consists of 6 to 8 weeks of instruction, including practice with carpentry tools. Course content typically includes:

- Use and care of carpentry tools
- Building construction
- Types and uses of construction joints and braces
- Interpretation of blueprints and drawings

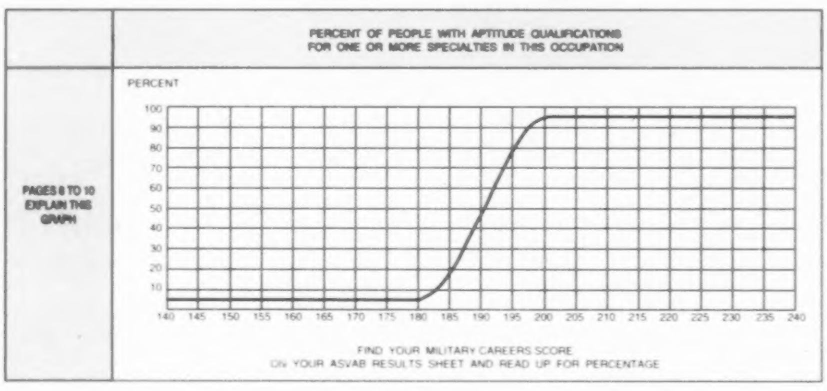
Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs in this occupation.

Civilian Counterparts

Civilian carpenters usually work for construction or remodeling contractors, government agencies, utility companies, or manufacturing firms. Other carpenters are self-employed contractors. Civilian carpenters perform duties similar to military carpenters. Civilian carpenters often specialize in finished or rough carpentry or cabinetmaking.

Opportunities

The military has about 3,600 carpenters. On average, the services need about 400 new carpenters each year. After job training, carpenters work in teams under close supervision. Initially, they perform simple work, such as form building and rough framing. With experience, they perform more difficult tasks. In time, they may supervise and train other carpenters. They may become construction superintendents.



SHEET METAL WORKERS

Navy
Air Force
Marine Corps
Coast Guard

Sheet metal is used as a building material in many military construction projects. Sheet metal workers make and install sheet metal products, such as roofs, air ducts, gutters, and vents. They also make custom parts to repair ships, buildings, and equipment.

What They Do

Sheet metal workers in the military perform some or all of the following duties:

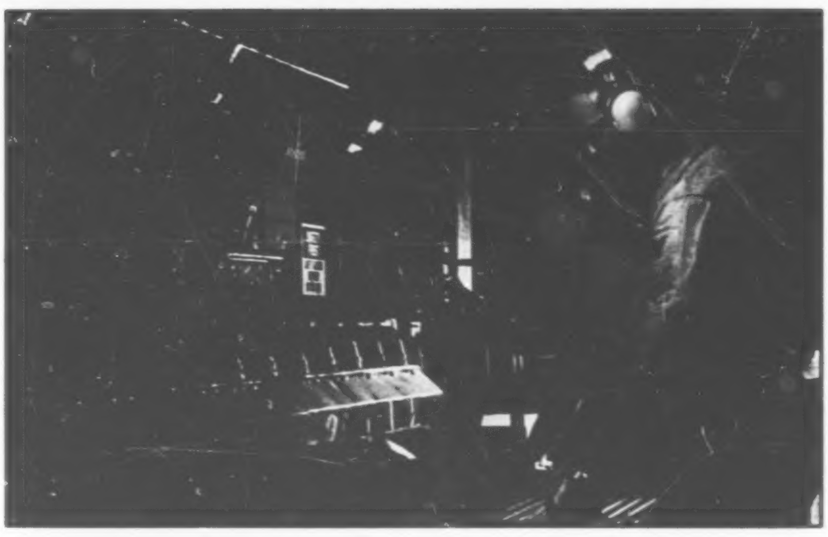
- Read blueprints and lay out work on sheet metal
- Cut metal using shears or tin snips
- Bend metal using breaks or bending rolls
- Solder, weld, rivet, or screw sheet metal parts together
- Smooth seams and edges with files or grinders
- Measure work with calipers, micrometers, and rulers

Physical Demands

Good color vision is needed for locating and marking reference points and dimensions on sheet metal.

Work Environment

Sheet metal workers work in metal shops on land and aboard ships. They also work outdoors at construction sites.



Training Provided

Job training consists of 4 to 8 weeks of classroom instruction, including practice in making and installing sheet metal products. Training length varies depending on specialty. Course content typically includes:

- Sheet metal layout
- Sheet metal duct work
- Use and care of soldering and welding equipment
- Use and care of hand and power tools

Further training occurs on the job. The Navy offers a certified apprenticeship program for this occupation.

Helpful Attributes

Helpful school subjects include math, mechanical drawing, and metal working. Helpful attributes include:

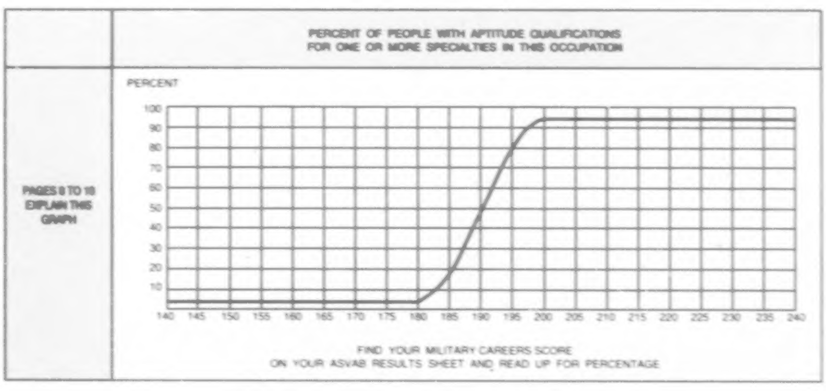
- Ability to use hand and power tools
- Preference for doing physical work
- Interest in making and repairing things

Civilian Counterparts

Civilian sheet metal workers work for air conditioning contractors, metal repair shops, or construction companies. They perform duties similar to those performed by sheet metal workers in the military. However, civilians usually specialize in certain areas, such as making heating and air conditioning ducts, gutters, or metal roofs.

Opportunities

The services have about 2,200 sheet metal workers. On average, they need about 250 new sheet metal workers each year. After job training, new workers install and repair sheet metal products under the direction of a supervisor. With experience, they work more independently and may help train new workers. In time, sheet metal workers may be promoted to shop supervisors.



PLUMBERS AND PIPE FITTERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Military buildings and equipment require pipe systems for water, steam, gas, and waste. Pipe systems are also needed on aircraft, missiles, and ships for hydraulic (fluid pressure) and pneumatic (air pressure) systems. Plumbers and pipe fitters install and repair plumbing and pipe systems.

What They Do

Plumbers and pipe fitters in the military perform some or all of the following duties:

- Plan layouts of pipe systems using blueprints and drawings
- Bend, cut, and thread pipes made of lead, copper, and plastic
- Install connectors, fittings, and joints
- Solder or braze pipe and tubing to join them
- Install sinks, toilets, and other plumbing fixtures
- Troubleshoot, test, and calibrate hydraulic and pneumatic systems
- Keep accurate records of tasks completed and materials used

Physical Demands

Plumbers and pipe fitters have to lift and carry heavy pipes and tubes.

Work Environment

Plumbers and pipe fitters work both indoors and outdoors on land and aboard ships.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction, including practice in repairing plumbing systems. Course content typically includes:

- Installation, operation, and repair of pipe systems
- Installation and repair of plumbing fixtures and boiler controls
- Installation and repair of water purification and distillation systems
- Maintenance and repair of hydraulic and pneumatic systems
- Methods of soldering, welding, silver brazing, and cutting

The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Helpful Attributes

Helpful school subjects include math and shop mechanics. Helpful attributes include:

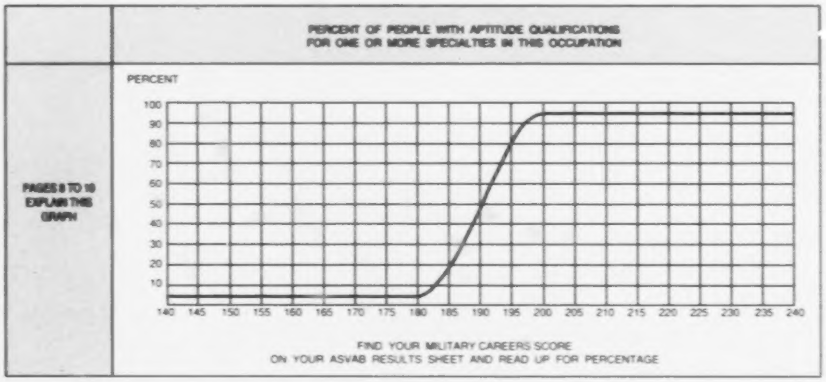
- Preference for doing physical work
- Ability to work with detailed plans

Civilian Counterparts

Civilian plumbers and pipe fitters usually work for mechanical or plumbing contractors or as self-employed contractors. Some plumbers and pipe fitters work for public utilities. Civilian plumbers and pipe fitters perform duties similar to those performed in the military.

Opportunities

The military has about 3,600 plumbers and pipe fitters. On average, the services need about 400 new plumbers and pipe fitters each year. After job training, plumbers and pipe fitters work under close supervision. With experience, they work more independently and may supervise others. Eventually, they may advance to become managers of utilities departments, construction units, or missile maintenance units.



WELL DRILLERS

Army
Navy

Fresh drinking water is not always available in areas where the military needs to set up a base or camp. Wells, drilled deep in the earth, are sometimes the only source of water. Well drillers operate drilling rigs that bore through rock and earth to make water wells.

What They Do

Well drillers in the military perform some or all of the following duties:

- Select drilling sites
- Erect and position derricks (towers for supporting drilling equipment)
- Drill wells using drilling rigs
- Study drilling core samples to find the best places to drill
- Test well water for purity
- Repair drill bits, drilling rigs, and related equipment

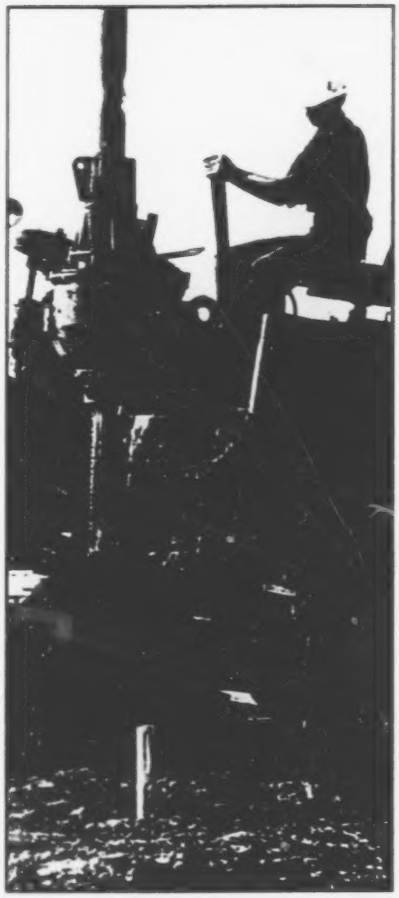
Physical Demands

Well drillers may have to lift and carry heavy equipment, such as drill bits and casings. Normal color vision is required to enter this occupation.

Helpful Attributes

Helpful school subjects include general science and geology. Helpful attributes include:

- Preference for working outdoors
- Interest in working with machines and equipment



Work Environment

Well drillers normally work outdoors in all types of climates. They work indoors while testing water for purity and repairing drilling tools.

Training Provided

Job training consists of 8 weeks of classroom instruction, including practice in maintaining well drilling equipment. Course content typically includes:

- Drilling site selection techniques
- Operation and maintenance of well drilling equipment
- Methods for testing well water purity
- Analysis of drilling core samples

Civilian Counterparts

Civilian well drillers work for independent water well drillers and construction contractors. They perform duties similar to military well drillers.

Opportunities

The services have about 1,100 well drillers. On average, they need about 200 new well drillers each year. After job training, well drillers work as members of a well drilling crew. With experience, they work more independently and may train other well drillers. Eventually, well drillers may advance to become drilling team supervisors and, possibly, construction superintendents.

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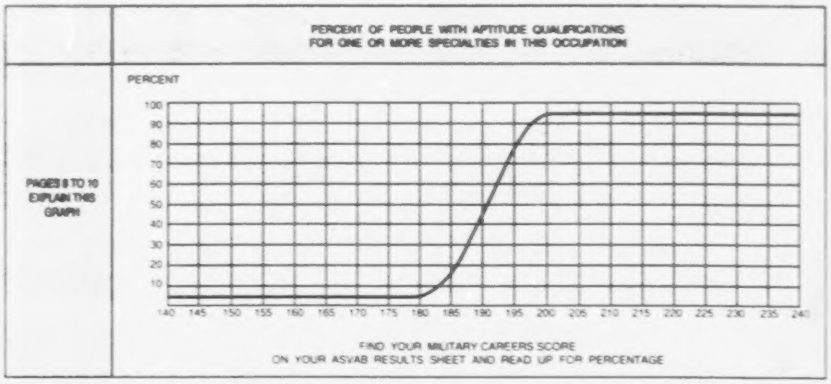
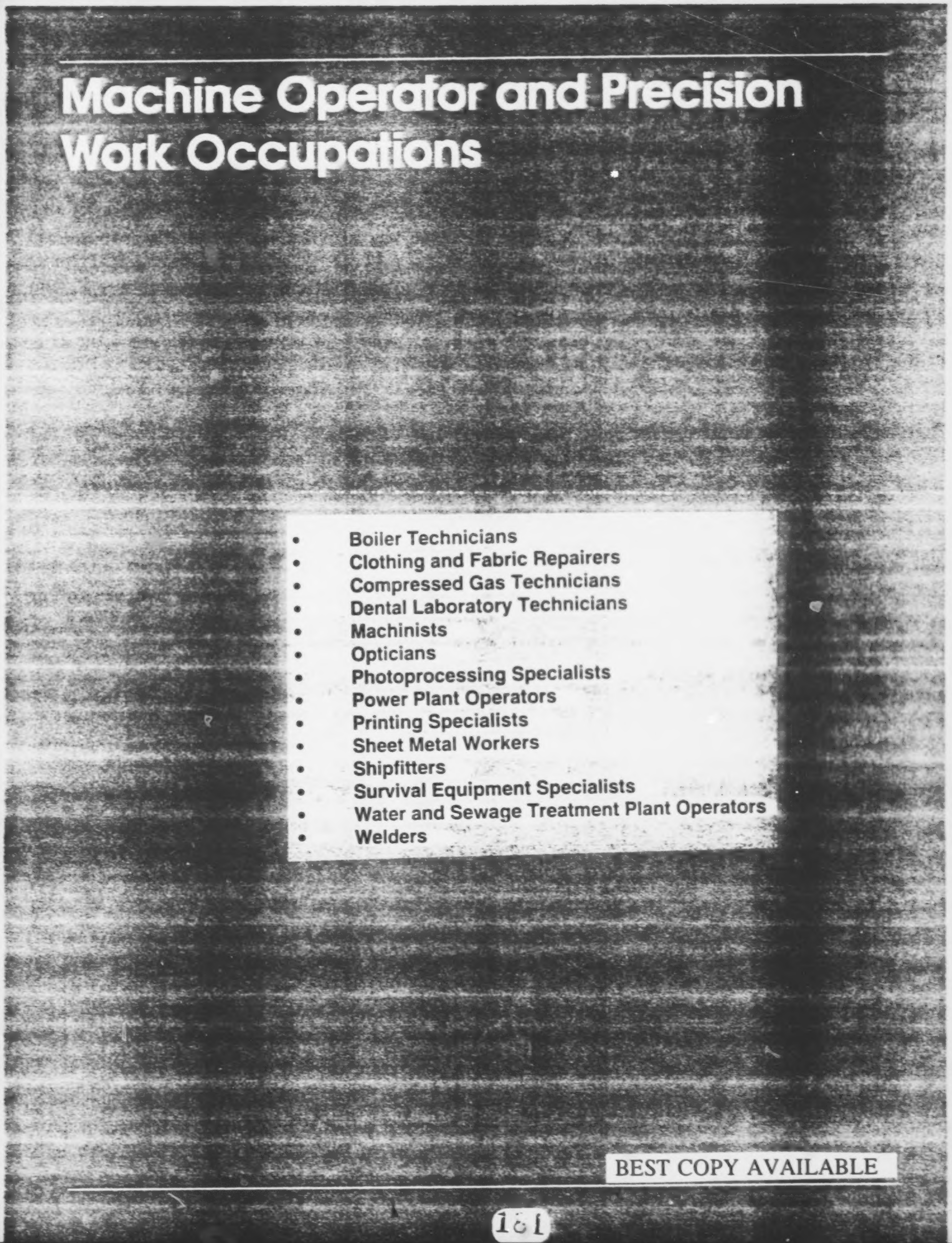


Machine Operator and Precision Work Occupations



- Boiler Technicians
- Clothing and Fabric Repairers
- Compressed Gas Technicians
- Dental Laboratory Technicians
- Machinists
- Opticians
- Photoprocessing Specialists
- Power Plant Operators
- Printing Specialists
- Sheet Metal Workers
- Shipfitters
- Survival Equipment Specialists
- Water and Sewage Treatment Plant Operators
- Welders

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BOILER TECHNICIANS

Navy
Coast Guard

Boilers are high pressure tanks that convert water into steam. The steam is used to drive large turbines, which power many ships. Boiler technicians operate and repair the large boilers that provide power for military ships. Turn to page 368 for more information about boiler technicians.

What They Do

Boiler technicians in the military perform some or all of the following duties:

- Operate main and auxiliary boilers
- Operate the steam turbines that generate power for the ship
- Maintain the heat source, high pressure fittings, and other boiler parts
- Operate and maintain automatic boiler controls
- Repair valves, pumps, and forced-air blowers
- Align fuel, water, and air piping systems using hand and power tools
- Test water and fuel for quality and purity

Training Provided

Job training consists of 12 to 16 weeks of classroom instruction, including practice in boiler equipment repair and maintenance. Course content typically includes:

- Basic marine engineering
- Use and care of hand and power tools
- Repair of propulsion systems
- Boiler maintenance

Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful school subjects include metal shop and math. Helpful attributes include:

- Interest in working with machines and equipment
- Preference for doing physical work
- Ability to work in confined areas

Physical Demands

Boiler technicians may have to lift or move heavy pumps, airblowers, and other equipment. They may have to stoop and kneel and work in awkward positions while repairing boilers.

Civilian Counterparts

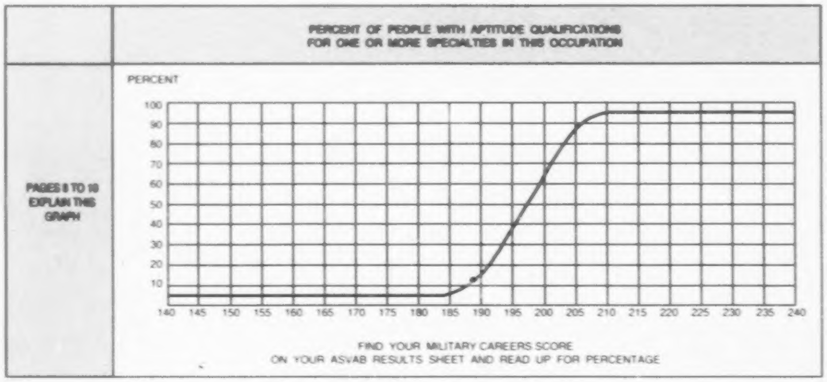
Civilian boiler technicians, called boilermakers, work for shiplines, boiler repair shops, or factories. They perform duties similar to military boiler technicians. Boiler technicians also build and install boilers, as well as operate and repair them. Besides shipping, boilers are used in buildings and factories for steam heat and power.

Work Environment

Boiler technicians work below deck in ship boiler rooms, which are often hot and noisy.

Opportunities

The services have about 2,500 boiler technicians. On average, they need about 200 new boiler technicians each year. After job training, boiler technicians are assigned to ships where they operate boilers under close supervision. With experience, they make repairs to boiler parts and control systems. In time, boiler technicians may advance to supervisory or management positions in ship engineering.



CLOTHING AND FABRIC REPAIRERS

Army
Navy
Air Force
Marine Corps

The military uses many items made of cloth or canvas, including uniforms and tents. Clothing and fabric repairers alter and repair clothing and canvas. They also sew name tags and patches on uniforms.

What They Do

Clothing and fabric repairers in the military perform some or all of the following duties:

- Inspect and mark items received for repair
- Repair tents, covers, and other canvas equipment
- Mend worn or damaged fabric and rubber goods
- Measure and mark uniforms for alterations
- Alter and repair uniforms
- Operate and maintain sewing machines

Helpful Attributes

Helpful attributes include:

- Ability to sew by hand or with machines
- Interest in work requiring accuracy and attention to detail

Work Environment

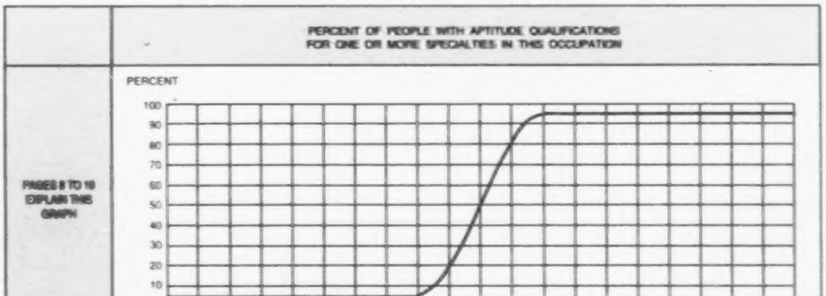
Clothing and fabric repairers work indoors in repair shops on land or aboard ships.

Training Provided

Job training consists of 6 to 8 weeks of classroom instruction, including practice in repairing fabrics. Course content typically includes:

- Procedures for marking items for repair or alterations
- Hand sewing techniques
- Use and care of sewing machines

Further training occurs on the job. The Army offers a certified apprenticeship program for one specialty in this occupation.



Civilian Counterparts

Civilian clothing and fabric repairers work for retail clothing stores, tailor shops, and firms that manufacture covers for boats, cars, and other equipment. Some clothing and fabric repairers work for laundries or dry cleaning shops. Civilian clothing and fabric repairers perform duties similar to military clothing and fabric repairers. Depending on specialty, civilian clothing and fabric repairers may also be called menders, canvas repairers, alteration tailors, or garment fitters.

Opportunities

The military has about 3,200 clothing and fabric repairers. On average, the services need about 200 new clothing and fabric repairers each year. After job training, clothing and fabric repairers work under the direction of more experienced workers and supervisors. In time, they may supervise other clothing and fabric repairers. Eventually, they may become superintendents of large maintenance repair facilities.

COMPRESSED GAS TECHNICIANS

Navy
Air Force
Marine Corps

Compressed gases have many uses in the military, such as breathing oxygen for jet pilots, divers, and medical patients and fuel for missiles and welding torches. Compressed gas technicians operate and maintain the machinery used to compress or liquefy gases.

What They Do

Compressed gas technicians in the military perform some or all of the following duties:

- Operate valves to control the flow of air through machinery that compresses or liquefies gases
- Remove impurities, such as carbon dioxide, from gases
- Fill storage cylinders with compressed gas
- Test cylinders for leaks, using pressure gauges
- Operate dry ice plants
- Maintain compressed gas machinery

Training Provided

Job training consists of 14 to 19 weeks of classroom instruction, including practice working with compressed gases. Course content typically includes:

- Operation and maintenance of systems that produce liquefied and compressed gases
- Storage, distribution, and handling of liquid gas and dry ice
- Procedures for changing and handling compressed gas cylinders
- Safety precautions

The Navy offers a certified apprenticeship program for one specialty in this occupation.

69
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KEEP FREE FROM OIL A
FRAGILE DO NOT
NO SMOKING WITHIN

Physical Demands

Normal color vision is usually required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in working with machines
- Preference for doing physical work

Work Environment

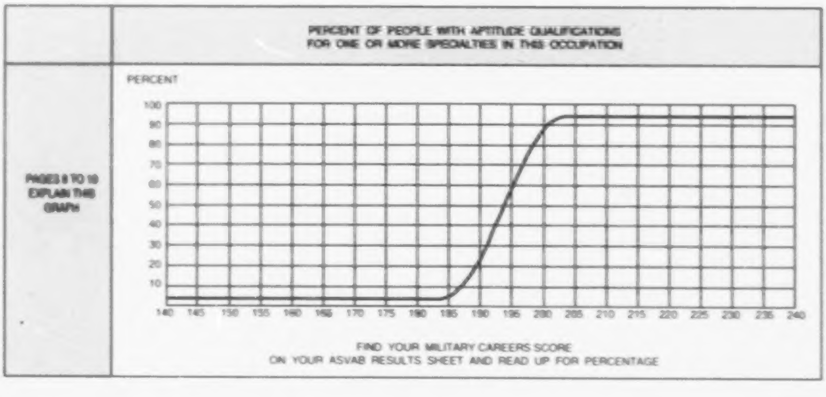
Compressed gas technicians in the military normally work indoors in shops on bases or aboard ships. Working with air compressors may be noisy and hot.

Civilian Counterparts

Civilian compressed gas technicians work for a wide range of industrial companies and processing plants, especially distilling and chemical firms. They perform duties similar to military compressed gas technicians. They may also be called oxygen plant operators, compressed gas plant workers, or acetylene plant operators.

Opportunities

The military has about 1,800 compressed gas technicians. On average, the services need about 150 new technicians each year. After job training, compressed gas technicians work under the direction of supervisors. With experience, they work more independently and may eventually manage compressed gas production plants.



DENTAL LABORATORY TECHNICIANS

Army
Navy
Air Force
Coast Guard

Dental laboratories provide military dentists with braces to straighten crooked teeth, dentures to replace missing teeth, and crowns to repair damaged teeth. Dental laboratory technicians make and repair braces, dentures, crowns, and other dental devices.

What They Do

Dental laboratory technicians perform some or all of the following duties:

- Read instructions from dentists to make dentures, braces, and other dental devices
- Make dentures or crowns using molds made from teeth impressions
- Grind and polish dentures to match natural teeth and to fit properly in patient's mouth
- Match the color of artificial teeth to natural tooth color following prescription orders from dentists
- Harden and cure new dentures in high temperature ovens
- Construct, repair, and align metal braces and retainers
- Order, store, and issue lab supplies

Helpful Attributes

Helpful school subjects include biology and chemistry. Helpful attributes include:

- Ability to use precision tools and instruments
- Interest in working in a laboratory setting
- Interest in work requiring attention to detail

Training Provided

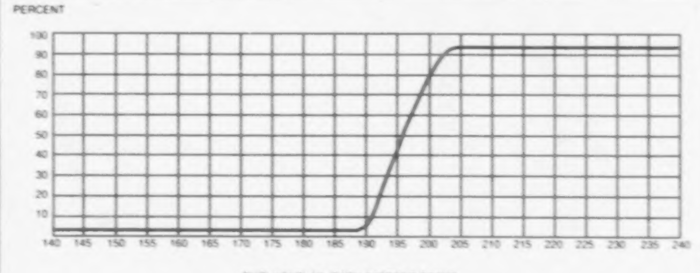
Job training consists of 22 to 24 weeks of classroom instruction, including practice in making and repairing dental devices. Course content typically includes:

- Dental terminology and laboratory procedures
- Making full and partial dentures, crowns, and bridges
- Making braces and retainers to straighten teeth

Further training occurs on the job and through advanced courses. The Navy offers a certified apprenticeship program for one specialty in this occupation.

PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH



FIND YOUR MILITARY CAREERS SCORE
ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

Work Environment

Dental laboratory technicians work indoors in dental labs.

Physical Demands

Normal color vision is required to match color of artificial teeth with natural tooth color.

Civilian Counterparts

Civilian dental laboratory technicians normally work for small, privately owned dental laboratories. However, some are employed in large dental offices. They perform duties similar to military dental laboratory technicians. However, civilian technicians often specialize in one of five dental areas: full dentures, partial dentures, crowns and bridges, ceramics, or orthodontics (tooth straightening).

Opportunities

The services have about 1,900 dental laboratory technicians. On average, they need about 150 new dental laboratory technicians each year. After job training, dental laboratory technicians work under very close supervision. With experience, they work more independently and are given more difficult tasks. Eventually, they may become supervisors or managers of dental laboratories.

MACHINISTS

Army
Navy
Air Force
Marine Corps

Sometimes when engines or machines break down, the parts needed to repair them are not available. In these cases, the broken parts must be repaired or new ones made. Machinists make and repair metal parts for engines and all types of machines. They operate lathes, drill presses, grinders, and other machine shop equipment. Turn to page 382 for more information about machinists.

What They Do

Machinists in the military perform some or all of the following duties:

- Study blueprints or written plans of the parts to be made
- Set up and operate lathes to make parts such as shafts and gears
- Cut metal stock using power hacksaws and bandsaws
- Bore holes using drill presses
- Shape and smooth parts using grinders
- Measure work using micrometers, calipers, and depth gauges

Special Requirements

Although there are women machinists, some specialties in this occupation are open only to men.

Helpful Attributes

Helpful school subjects include math, general science, metal working, and mechanical drawing. Helpful attributes include:

- Preference for working with the hands
- Interest in making things and finding solutions to mechanical problems
- Ability to apply mathematical formulas

Work Environment

Machinists work in machine shops, which are often noisy.

Training Provided

Job training consists of 10 to 12 weeks of classroom instruction, including practice in machine operation. Course content typically includes:

- Machine types and uses
- Machine setup and operation
- Uses of different metals
- Safety procedures

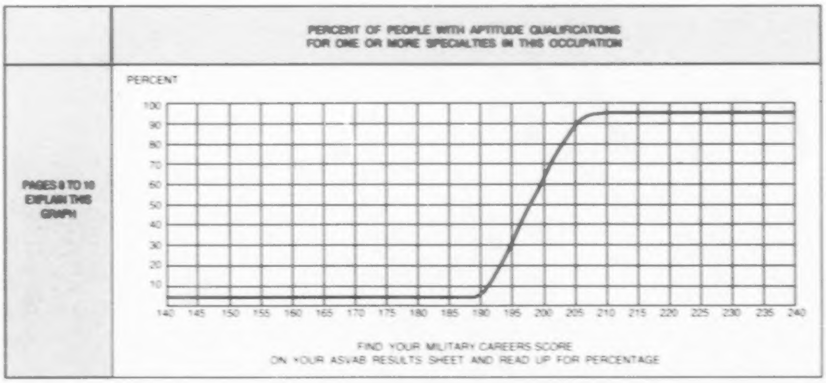
Further training occurs on the job and through advanced courses. The Army and Navy offer certified apprenticeship programs for this occupation.

Civilian Counterparts

Civilian machinists work for factories and repair shops in many industries, including the electrical product, automotive, and heavy machinery industries. They perform duties similar to military machinists.

Opportunities

The services have about 5,600 machinists. On average, they need about 450 new machinists each year. After job training, machinists perform routine repairs under close supervision. In time, they perform more difficult repairs and may train others. Eventually, they may become managers of one or more machine shops.



OPTICIANS

Army
Navy

The military provides eye care to all service men and women as part of its comprehensive health service program. Eyeglasses are frequently needed to correct nearsighted or farsighted vision. Opticians grind corrective lenses for eyeglasses. They also fit and adjust glasses for eye care patients.

What They Do

Opticians in the military perform some or all of the following duties:

- Calculate the correct lens size and thickness from written prescriptions
- Grind and polish lenses using power grinders and polishers
- Smooth lens edges using hand or power tools
- Dye lenses to prescribed tints and apply lens coatings for protection
- Harden lenses using heat-treating equipment
- Assemble eyeglass frames and lenses using optical tools
- Fit and adjust glasses for eye care patients

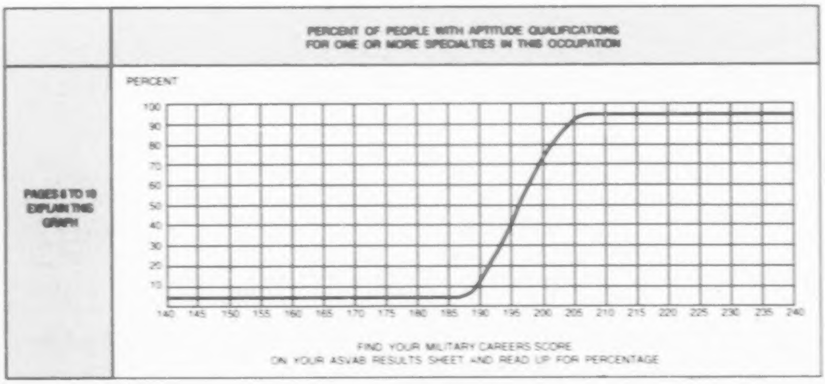
Special Requirements

Successful completion of high school algebra is required to enter some specialties in this occupation.

Training Provided

Job training consists of 21 to 26 weeks of classroom instruction, including practice in grinding and fitting corrective lenses. Optician candidates who already have an optician's license or have completed a 1-year optician course may be exempted from some or all of the military job training. Course content typically includes:

- Study of the structure, function, and diseases of the eyes
- Optical laboratory operating procedures
- Techniques for adjusting, fitting, and dispensing eyeglasses



Helpful Attributes

Helpful attributes include:

- Ability to follow detailed instructions and work procedures
- Ability to do precise work
- Interest in working with one's hands

Work Environment

Opticians normally work in optical laboratories and in examination and dispensing offices.

Civilian Counterparts

Civilian opticians work for optical laboratories and retail opticians. They perform duties similar to military opticians. They may also be called ophthalmic laboratory technicians.

Opportunities

The services have about 300 opticians. On average, they need about 30 new opticians each year. After job training, opticians are assigned to optical labs and dispensaries, where they work under close supervision. With experience, they work more independently and may help train new opticians. In time, opticians may supervise optical laboratories.

PHOTOPROCESSING SPECIALISTS

Army
Navy
Air Force

The services operate photographic laboratories to develop the thousands of photographs and motion picture films taken each year by the military. Photoprocessing specialists develop still and motion picture film using film processors and printers.

What They Do

Photoprocessing specialists in the military perform some or all of the following duties:

- Develop film "negatives" by using a series of chemical and water baths
- Produce prints from negatives
- Operate developing machines that make prints from film
- Monitor the flow of film and printing paper through automated processors
- Operate photo enlargers
- Maintain photographic lab equipment

Work Environment

Photoprocessing specialists in the military work in photographic laboratories on bases or aboard ships.

Training Provided

Job training consists of 12 to 24 weeks of classroom instruction, including practice in developing film. Training length varies depending on specialty. Course content typically includes:

- Chemistry of photographic development
- Operation of automatic film processors
- Darkroom procedures

Further training occurs on the job and through advanced courses.

Physical Demands

Normal color vision is required to produce accurate color prints.

Helpful Attributes

Helpful school subjects include chemistry and photography. Helpful attributes include:

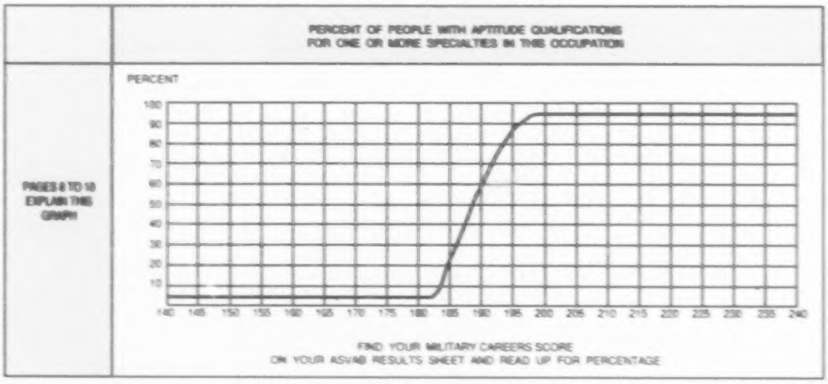
- Interest in photography and photoprocessing
- Interest in chemistry
- Ability to do work requiring accuracy and attention to detail

Civilian Counterparts

Civilian photoprocessing specialists work for large commercial photograph developers, portrait and studio labs, newspaper and magazine publishing companies, and advertising agencies. They perform duties similar to military photoprocessing specialists. They may also be called film developers, automatic print developers, or print controllers.

Opportunities

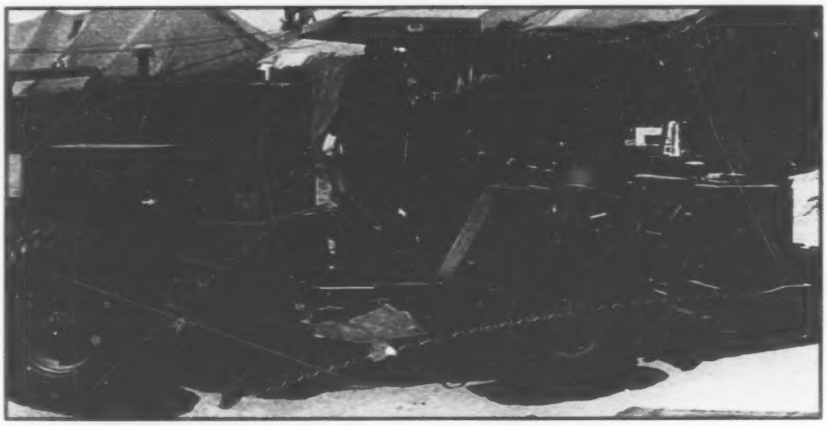
The services have about 1,300 photoprocessing specialists. On average, they need about 100 new photoprocessing specialists each year. After job training, photoprocessing specialists work under the direction of experienced workers and supervisors. With experience, they work more independently and may supervise others. In time, photoprocessing specialists may advance to become managers of photographic laboratories.



POWER PLANT OPERATORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Power plants generate electricity for ships, submarines, and military bases. The military uses many different types of power plants. Some are fueled by oil, others run on coal. Many ships and submarines have nuclear power plants. Power plant operators control power generating plants on land and aboard ships and submarines. They operate boilers, turbines, nuclear reactors, and portable generators.



What They Do

Power plant operators in the military perform some or all of the following duties:

- Monitor and operate control boards to regulate power plants
- Operate and maintain diesel generating units to produce electric power
- Monitor and control nuclear reactors that produce electricity and power ships and submarines
- Operate and maintain stationary engines, such as steam engines, air compressors, and generators
- Operate and maintain auxiliary equipment, such as pumps, fans, and condensers
- Inspect equipment for malfunctions

Helpful Attributes

Helpful school subjects include math and shop mechanics. Helpful attributes include:

- Interest in working with large machinery
- Interest in nuclear power

Physical Demands

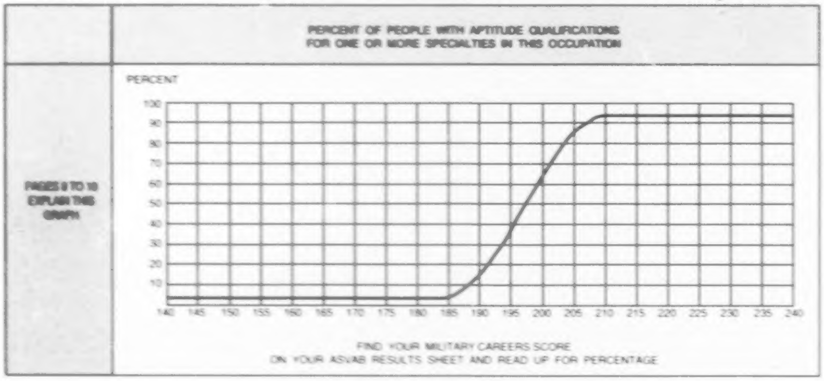
Power plant operators lift heavy parts or tools when maintaining power plants.

Training Provided

Job training consists of 20 to 25 weeks of classroom instruction, including practice in operating power plants. Course content typically includes:

- Operation of pressure boilers
- Operation and maintenance of reactor control systems
- Operation and maintenance of mechanical systems on nuclear powered ships and submarines

Nuclear specialties have training programs that last 1 year or more, covering all aspects of nuclear power plant operations.



Special Requirements

Nuclear specialties are open only to men and require successful completion of high school algebra.

Work Environment

Power plant operators usually work indoors. They are subject to high temperatures, dust, and noise.

Civilian Counterparts

Civilian power plant operators work for power companies, factories, schools, and hospitals. They perform duties similar to military power plant operators. Depending on the specialty, power plant operators may also be called boiler operators, stationary engineers, nuclear reactor operators, or diesel plant operators.

Opportunities

The services have about 15,500 power plant operators. On average, they need about 950 new power plant operators each year. After job training, power plant operators work under the close direction of supervisors. With experience, they may gain greater responsibility for plant operations and supervise other operators. Eventually, they may become superintendents of utilities for large bases or chiefs of ships' engineering departments.

PRINTING SPECIALISTS

Army
Navy
Air Force
Marine Corps

The military produces many printed publications each year, including newspapers, booklets, training manuals, maps, and charts. Printing specialists operate printing presses and binding machines to make finished copies of printed material.

What They Do

Printing specialists in the military perform some or all of the following duties:

- Reproduce printed matter using offset lithographic printing processes
- Prepare photographic negatives and transfer them to printing plates using copy cameras and enlargers
- Prepare layouts of artwork, photographs, and text for lithographic plates
- Produce brochures, newspapers, maps, and charts
- Bind printed material into hardback or paperback books using binding machines
- Maintain printing presses

Helpful Attributes

Helpful school subjects include shop mechanics. Helpful attributes include:

- Preference for doing physical work
- Interest in learning about printing

Training Provided

Job training consists of 8 to 20 weeks of classroom instruction, including practice in operating printing presses. Training length varies by specialty. Course content typically includes:

- Photolithography techniques
- Operation of offset presses
- Techniques for making printing plates
- Binding techniques

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs in this occupation.

Work Environment

Printing specialists work indoors in print shops and offices located on land or aboard ships.

Civilian Counterparts

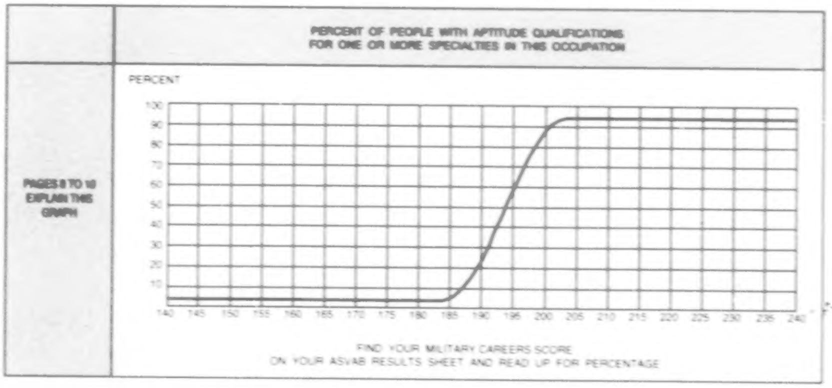
Civilian printing specialists work for commercial print shops, newspapers, insurance companies, government offices, or businesses that do their own printing. They perform duties similar to military printing specialists. They may be called offset printing press operators, lithograph press operators, offset duplicating machine operators, lithograph photographers, or bindery workers.

Physical Demands

Normal color vision is required to enter some specialties in this occupation.

Opportunities

The military has about 1,800 printing specialists. On average, the services need about 200 new specialists each year. After job training, specialists normally operate printing and binding machines under direct supervision. With experience, they work more independently, setting up and operating machines. In time, printing specialists may become supervisors of printing plants.



SHIPFITTERS

Army
Navy
Coast Guard

Ocean storms, underwater pressure, or combat may cause damage to ships. Shipfitters repair the hulls and other structural parts of ships, submarines, boats, and landing craft.

What They Do

Shipfitters in the military perform some or all of the following duties:

- Inspect hulls, hatches, and decks for leaks
- Weld or rivet metal plates onto hulls and decks to repair damage
- Repair the walls (bulkheads) that separate ship compartments
- Repair holes in small boats by applying fiberglass mixtures
- Smooth patches to match hull shape with hand tools, such as files and sanders
- Apply paint to seal and protect repair work
- Repair hatches and watertight doors

Training Provided

Job training consists of 10 to 13 weeks of classroom instruction, including practice in ship repair. Course content typically includes:

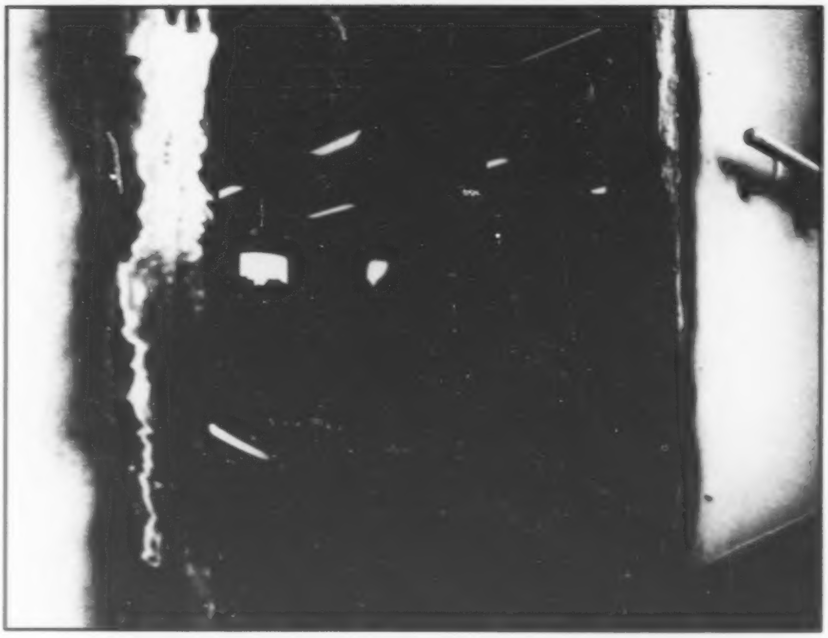
- Operation of welding, soldering, and brazing equipment
- Blueprint reading
- Hull inspection
- Fiberglass patching

Further training occurs on the job and through advanced courses. The Navy offers a certified apprenticeship program for this occupation.

Helpful Attributes

Helpful attributes include:

- Preference for doing physical work
- Ability to use hand and power tools
- Ability to remain calm in emergencies
- Preference for working outdoors



Physical Demands

Shipfitters may have to lift heavy steel plates. They may have to work in crouching or kneeling positions. Normal color vision is required to adjust welding equipment and to match paints.

Civilian Counterparts

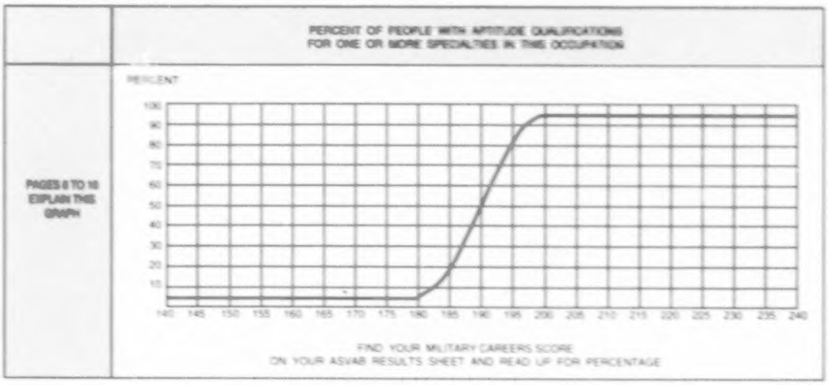
Civilian shipfitters work for shipyards, drydock repair firms, or other marine servicing companies. They tend to specialize by size of craft. They perform duties similar to military shipfitters and may also be called marine services technicians.

Work Environment

Shipfitters perform most of their work outdoors.

Opportunities

The services have about 2,000 shipfitters. On average, they need about 200 new shipfitters each year. After job training, shipfitters perform basic welding and patching work under supervision. With experience, they perform more difficult repairs and supervise others. Eventually, shipfitters may become superintendents of ship repair yards.



SURVIVAL EQUIPMENT SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Military personnel often have hazardous assignments. They depend on survival equipment (parachutes, rescue equipment) to protect their lives in case of emergencies. Survival equipment specialists inspect, maintain, and repair survival equipment such as parachutes, aircraft life support equipment, and air-sea rescue equipment.

What They Do

Survival equipment specialists in the military perform some or all of the following duties:

- Inspect parachutes for rips and tangled lines
- Pack parachutes for safe operation
- Repair life rafts and load them with emergency provisions
- Test emergency oxygen regulators on aircraft
- Stock aircraft with fire extinguishers, flares, and survival provisions
- Train crews in the use of survival equipment

Work Environment

Survival equipment specialists in the military work in repair shops on land or aboard ships.

Physical Demands

Normal color vision is required to work with color-coded wiring and repair charts.

Helpful Attributes

Helpful school subjects include shop mechanics and science. Helpful attributes include:

- Interest in working for the safety of others
- Ability to do work requiring accuracy and attention to detail

Training Provided

Job training consists of 9 to 12 weeks of classroom instruction, including practice in working with survival equipment. Course content typically includes:

- Parachute rigging techniques
- Repair of inflatable rafts and other survival equipment
- Maintenance of oxygen equipment
- Maintenance of air-sea rescue equipment

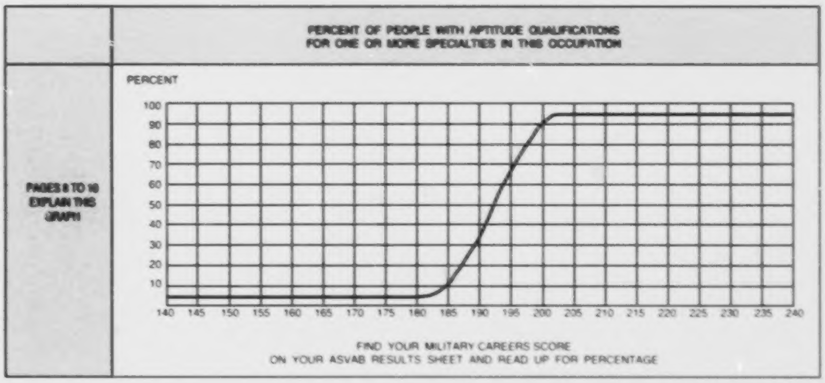
Further training occurs on the job and through additional courses.

Civilian Counterparts

Civilian survival equipment specialists work for commercial airlines, parachute rigging and supply companies, survival equipment manufacturing firms, and some government agencies. They perform duties similar to military survival equipment specialists. Those that specialize in parachutes are called parachute riggers.

Opportunities

The military has about 8,100 survival equipment specialists. On average, the services need about 900 new specialists each year. After job training, survival equipment specialists work on survival equipment under the close direction of supervisors. With experience, they work with less supervision and perform more challenging tasks. In time, survival equipment specialists may become supervisors assisting in the management of survival equipment repair facilities.



WATER AND SEWAGE TREATMENT PLANT OPERATORS

Army
Navy
Air Force
Marine Corps
Coast Guard

Military bases operate their own water treatment plants when public facilities cannot be used. These plants provide drinking water and safely dispose of sewage. Water and sewage treatment plant operators maintain the systems that purify water and treat sewage.

What They Do

Water and sewage treatment plant operators in the military perform some or all of the following duties:

- Operate pumps to transfer water from reservoirs and storage tanks to treatment plants
- Add chemicals and operate machinery that purifies water for drinking or cleans it for safe disposal
- Test water for chlorine content, acidity, oxygen demand, and impurities
- Regulate the flow of drinking water to meet demand
- Clean and maintain water treatment machinery
- Keep records of chemical treatments, water pressure, and maintenance

Helpful Attributes

Helpful school subjects include chemistry, math, and shop mechanics. Helpful attributes include:

- Interest in working with mechanical equipment
- Interest in chemistry and pollution control

Work Environment

Water and sewage treatment plant operators work indoors and outdoors. They may be exposed to strong odors.

Physical Demands

Normal color vision is needed to examine water for acidity and impurities.

Training Provided

Job training consists of 8 to 10 weeks of classroom instruction, including practice operating water and sewage treatment equipment. Course content typically includes:

- Operation of treatment systems
- Water testing and analysis
- Maintenance and repair of pumps, compressors, and other equipment

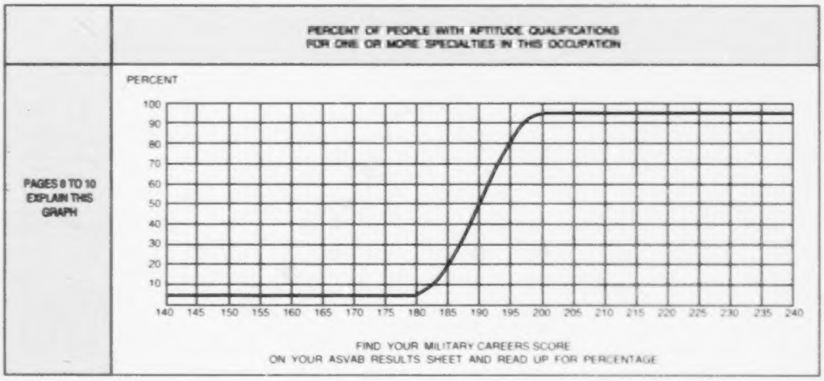
Further training occurs on the job and through advanced courses. The Army and the Navy offer certified apprenticeship programs for some specialties in this occupation.

Civilian Counterparts

Civilian water and sewage treatment plant operators work for municipal public works and industrial plants. Their work is similar to military water and sewage treatment plant operators. Civilian plant operators usually specialize as water treatment plant operators, waterworks pump station operators, or wastewater treatment plant operators.

Opportunities

The services have about 2,400 water and sewage plant operators. On average, they need 300 new plant operators each year. After job training, new operators work under close supervision in water or sewage treatment plants. With experience, they may supervise plant operations. Eventually, they may become base utilities superintendents.



WELDERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Ships, tanks, and aircraft are made of heavy metal armor. Many tools, pipes, and other military equipment are also made of metal. To repair this equipment, the military must be able to cut and join metal parts. Welders operate electric and gas welding rigs to cut and join steel, iron, or other metals.

What They Do

Welders in the military perform some or all of the following duties:

- Select welding equipment, torch tips, and fill rods, based on the type of welding to be done
- Weld, braze, or solder metal parts together
- Forge and repair small items and tools
- Connect piping
- Cut away unneeded metal using arc (electric) welders or acetylene (gas) torches
- Clean metal surfaces before welding
- Operate automatic welding machines to connect metal parts

Work Environment

Welders work indoors in metalworking shops and aircraft hangars and outdoors at construction sites or in the field. Welding is sometimes hot work and often involves lifting heavy objects.

Physical Demands

Normal color vision is required for setting and adjusting torches.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction, including practice in basic welding skills. Course content typically includes:

- Use and care of welding equipment
- Types of welding joints
- Procedures for cutting, brazing, and heat treating

The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Helpful Attributes

Helpful school subjects include shop mechanics, metal working, and mechanical drawing. Helpful attributes include:

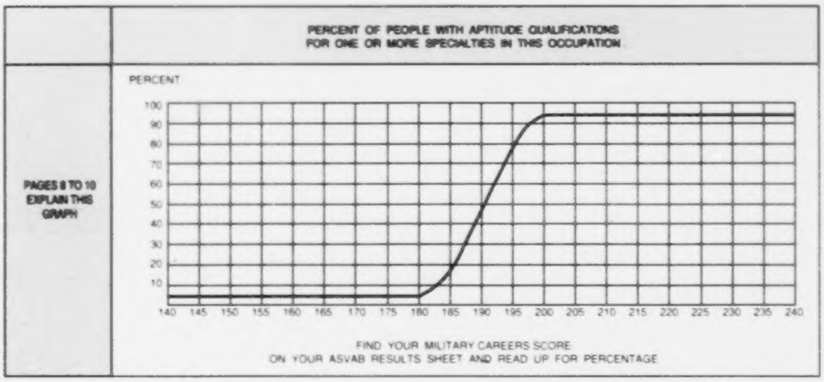
- Preference for doing physical work
- Good hand-eye coordination

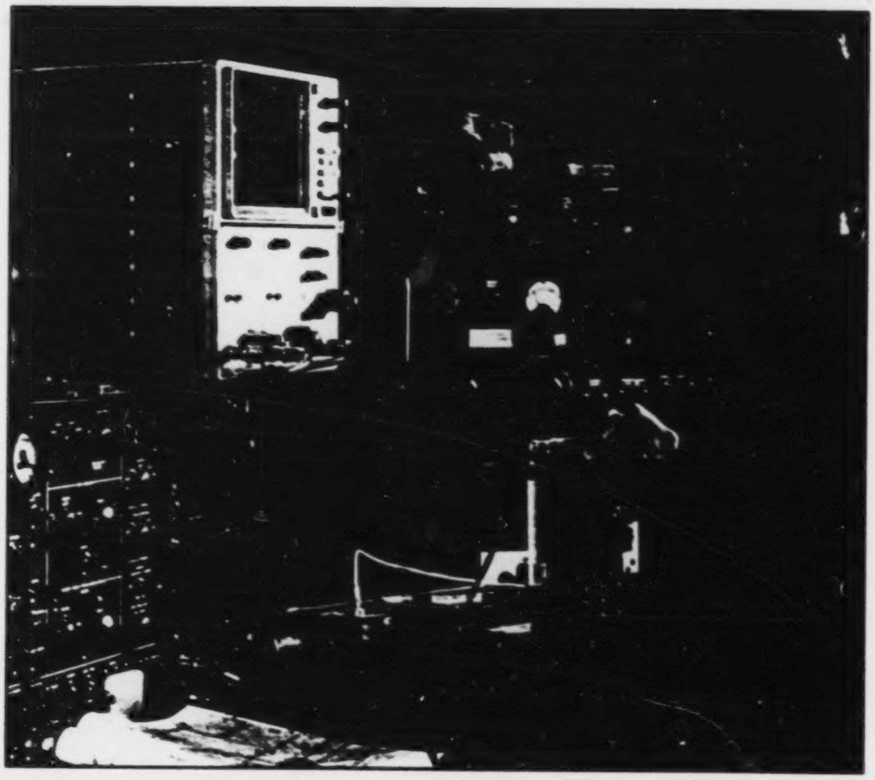
Civilian Counterparts

Civilian welders work in many settings, including welding shops, pipeline companies, ship builders, and aircraft manufacturing plants. They perform the same basic duties as welders in the military.

Opportunities

The services have about 4,200 welders. On average, they need about 300 new welders each year. After job training, welders perform simple welds and cuts under close supervision. With experience, they work more independently and perform more complex welding tasks. They may also become supervisors and may eventually become construction superintendents or managers of maintenance depots.





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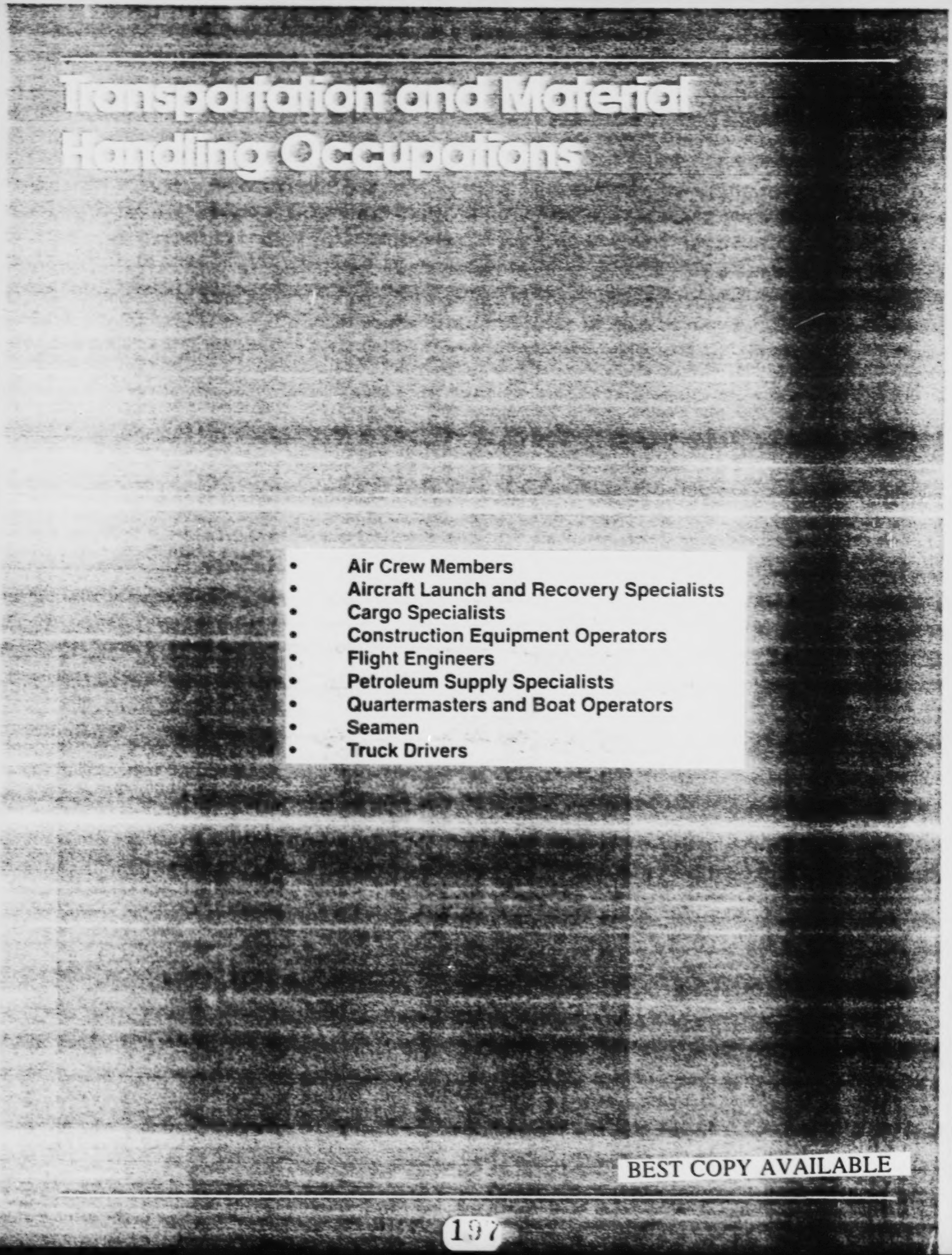
Transportation and Material Handling Occupations



- Air Crew Members
- Aircraft Launch and Recovery Specialists
- Cargo Specialists
- Construction Equipment Operators
- Flight Engineers
- Petroleum Supply Specialists
- Quartermasters and Boat Operators
- Seamen
- Truck Drivers

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AIR CREW MEMBERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses aircraft of all types and sizes to conduct combat and intelligence missions, rescue personnel, transport troops and equipment, and perform long-range bombing missions. Air crew members operate equipment on board aircraft during operations. They normally specialize by type of aircraft, such as bomber, intelligence, transport, or search and rescue. Turn to page 358 for more information about air crew members.

What They Do

Air crew members in the military perform some or all of the following duties:

- Operate aircraft communication and radar equipment
- Operate and maintain aircraft defensive gunnery systems
- Operate helicopter hoists to lift equipment and personnel from land and sea
- Operate and maintain aircraft in-flight refueling systems

Training Provided

Job training consists of 7 to 9 weeks of classroom instruction, including practical experience in aircraft systems operation and maintenance. Course content varies by specialty and may include:

- Operation of aircraft gunnery systems
- Operation of aircraft in-flight refueling systems
- Cargo, munitions, and fuel load planning
- Rescue and recovery operations

Further training occurs on the job through actual flying time. There are additional courses covering air crew survival, scuba diving, parachuting, aircraft maneuvering, and combat crew training. The Army, Navy, and Marine Corps offer certified apprenticeship programs for one specialty in this occupation.

Special Requirements

Although there are women air crew members, some specialties in this occupation are open only to men.

Helpful Attributes

Helpful school subjects include mathematics and mechanics. Helpful attributes include:

- Interest in flying
- Ability to work under stress
- Ability to work as a team member

Work Environment

Air crew members work inside all sizes and types of aircraft based on land or aboard ships. They fly in all types of weather and in both hot and cold climates.

Physical Demands

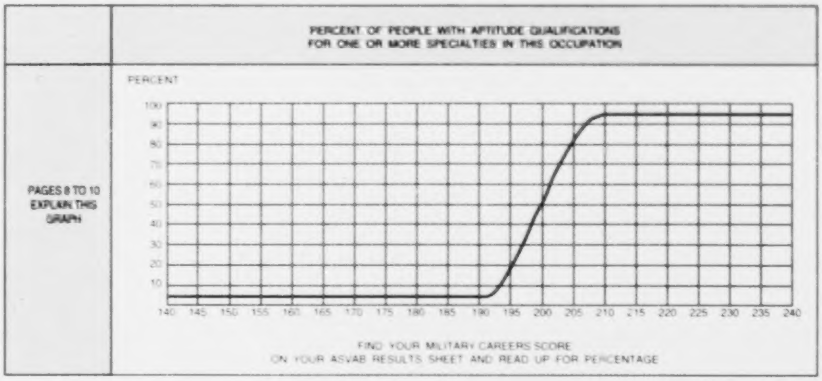
Air crew members must be in excellent physical condition and pass a special physical exam in order to qualify for flight duty. They must be mentally sound and have normal hearing.

Civilian Counterparts

There are no direct civilian equivalents to military air crew members. However, some of the skills gained in the military could be useful in civilian government and private agencies that provide emergency medical services. Also, weight and load computation skills are useful for civilian air transport operations.

Opportunities

The services have about 6,700 air crew members. On average, they need about 900 new air crew members each year. After receiving their "air crew qualified" rating, air crew members are assigned to a flying unit. They may work on one of many types of aircraft under direction of the aircraft commander. With experience, they may supervise and train other enlisted air crew members. They have the opportunity to become air crew chiefs, combat crew chiefs, or supervisors of rescue and recovery units.



PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS
FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH

FIND YOUR MILITARY CAREERS SCORE
ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

AIRCRAFT LAUNCH AND RECOVERY SPECIALISTS

Navy
Marine Corps

The military operates thousands of aircraft that take off and land on aircraft carriers all over the world. The successful launch and recovery of aircraft is important to the completion of air missions and the safety of flight crews. Aircraft launch and recovery specialists operate and maintain catapults, arresting gear, and other equipment used in aircraft carrier takeoff and landing operations. Turn to page 362 for more information about aircraft launch and recovery specialists.

What They Do

Aircraft launch and recovery specialists in the military perform some or all of the following duties:

- Operate consoles to control launch and recovery equipment, including catapults and arresting gear
- Operate elevators to transfer aircraft between flight and storage decks
- Install and maintain visual landing aids
- Test and adjust launch and recovery equipment using electric and mechanical test equipment and hand tools
- Install airfield crash barriers and barricades
- Direct aircraft launch and recovery operations using hand or light signals
- Maintain logs of airplane launches, recoveries, and equipment maintenance

Special Requirements

This occupation is open only to men.

Helpful Attributes

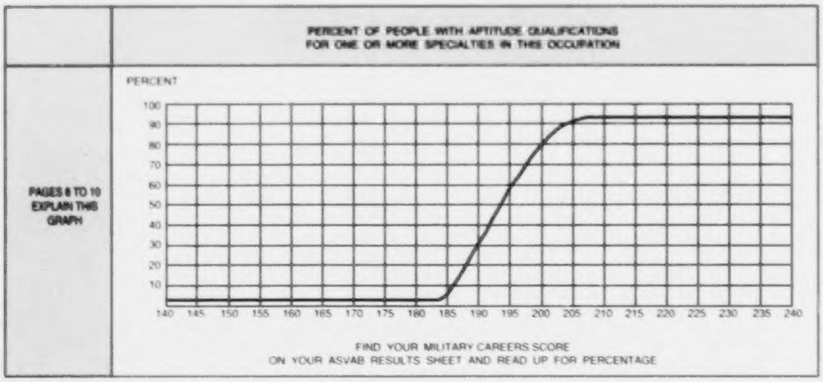
Helpful school subjects include shop mechanics. Helpful attributes include:

- Interest in working on hydraulic and mechanical equipment
- Ability to use hand tools and test equipment
- Interest in aircraft flight operations

Training Provided

Job training consists of 9 to 13 weeks of classroom instruction, including practice in maintaining launch and recovery equipment. Course content typically includes:

- Operating launch and recovery equipment
- Installing crash barriers and barricades
- Maintaining launch and recovery equipment
- Handling aircraft



Physical Demands

Normal color vision is required to work with color-coded parts and the wiring of launch and recovery equipment.

Work Environment

Aircraft launch and recovery specialists work outdoors aboard ships while operating and maintaining launch and recovery equipment or holding visual landing aids for incoming aircraft. They are exposed to noise and fumes from jet and helicopter engines.

Civilian Counterparts

There are no direct civilian counterparts to military aircraft launch and recovery specialists. However, many of the skills learned are relevant to jobs performed by ground crews at civilian airports.

Opportunities

The services have about 3,200 aircraft launch and recovery specialists. On average, they need about 300 new specialists each year. After job training, specialists are assigned to an aircraft launch and recovery section aboard an aircraft carrier or at an airfield. Initially, they perform maintenance and repair on equipment, working under close supervision. With experience, they perform more complex operation and maintenance activities. In time, they may train and supervise other aircraft launch and recovery specialists. Eventually, they may supervise activities on carrier flight and storage decks.

CARGO SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military delivers supplies, weapons, equipment, and mail to American forces in many parts of the world. Military cargo travels by ship, truck, or airplane. It must be handled carefully to ensure safe arrival at the correct destination. Cargo specialists load and unload military supplies and material using equipment such as forklifts and cranes. They also plan and organize loading schedules.

What They Do

Cargo specialists in the military perform some or all of the following duties:

- Load supplies into trucks, transport planes, and railroad cars using forklifts
- Load equipment such as jeeps, trucks, and weapons aboard ships, using dockyard cranes
- Pack and crate boxes of supplies for shipping
- Inspect cargo for damage
- Plan and inspect loads for balance and safety
- Check cargo against invoices to make sure the amount and destination of material are correct

Physical Demands

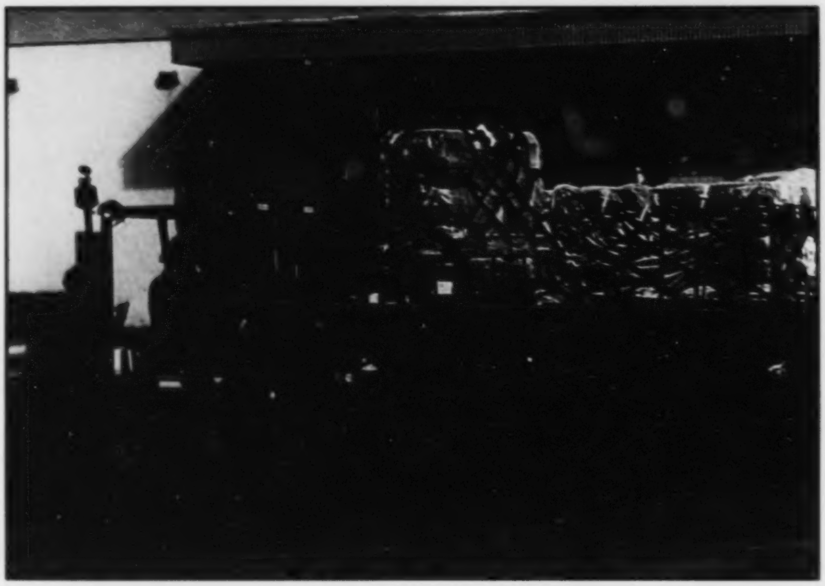
Cargo specialists must lift and carry heavy cargo.

Training Provided

Job training consists of 2 to 6 weeks of classroom instruction, including practice in loading cargo. Course content typically includes:

- Operation and care of forklifts, power winches, and cranes
- Techniques for loading and storing cargo
- Techniques for planning and scheduling cargo shipments
- Safety procedures for handling potentially dangerous cargo

Further training occurs on the job.



Helpful Attributes

Helpful school subjects include general office and business mathematics. Helpful attributes include:

- Interest in working with forklifts and cranes
- Preference for physical work

Civilian Counterparts

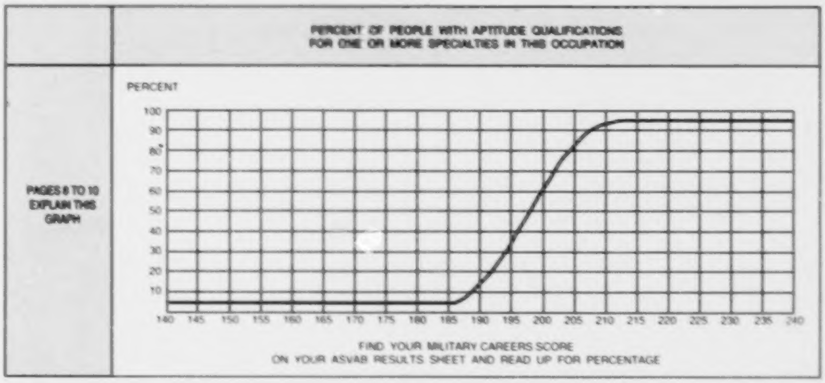
Civilian cargo specialists work for trucking firms, air cargo companies, and shipping lines. They perform duties similar to military cargo specialists. Depending on specialty, they may also be called industrial truck operators, stevedores, longshoremen, material handlers, or cargo checkers.

Work Environment

Cargo specialists work outdoors on loading docks and indoors in warehouses.

Opportunities

The services have about 5,400 cargo specialists. On average, they need about 800 new cargo specialists each year. After job training, cargo specialists work in teams preparing and loading cargo for shipment under the direction of supervisors. In time, they may advance to become team leaders or supervisors of other cargo specialists. Eventually, they may become warehouse managers.



PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

CONSTRUCTION EQUIPMENT OPERATORS

Army
Navy
Air Force
Marine Corps

Each year the military completes hundreds of construction projects. Tons of earth and building materials must be moved to build airfields, roads, dams, and buildings. Construction equipment operators operate bulldozers, cranes, graders, and other heavy equipment used in military construction.

What They Do

Construction equipment operators in the military perform some or all of the following duties:

- Drive bulldozers, roadgraders, and other heavy equipment to cut and level earth for runways and roadbeds
- Lift and move steel and other heavy building materials using winches, cranes, and hoists
- Dig holes and trenches using power shovels
- Remove ice and snow from runways, roads, and other areas using scrapers and snow blowers

Helpful Attributes

Helpful school subjects include shop mechanics. Helpful attributes include:

- Interest in operating heavy construction equipment
- Preference for working outdoors

Physical Demands

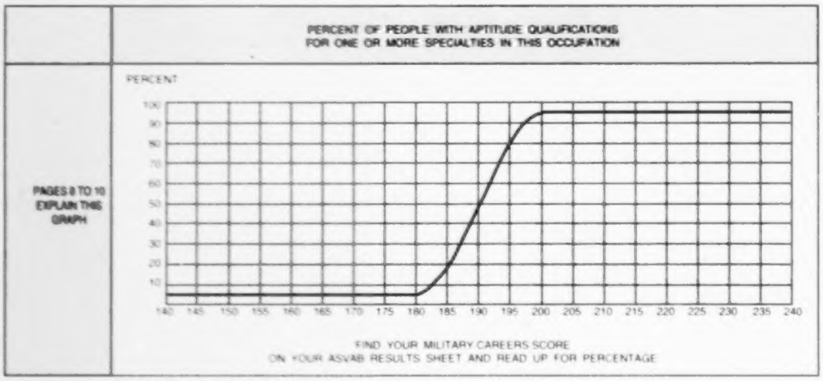
Normal color vision is required to identify colored flags and stakes.

Training Provided

Job training consists of 8 to 9 weeks of classroom instruction, including practice operating construction equipment. Course content typically includes:

- Operation of different types of construction equipment
- Maintenance and repair of equipment

Further training occurs on the job and through advanced courses. The Army and the Navy offer certified apprenticeship programs for one specialty in this occupation.



Work Environment

Construction equipment operators work outdoors in all kinds of weather conditions. They often sit for long periods and are subject to loud noise and vibrations.

Civilian Counterparts

Civilian construction equipment operators work for building contractors, state highway agencies, and other large-scale construction firms. They perform duties similar to military construction equipment operators. Civilian construction equipment operators may also be known as operating engineers or heavy equipment operators.

Opportunities

The services have about 6,100 construction equipment operators. On average, they need about 900 new construction equipment operators each year. After job training, construction equipment operators work as members of construction crews under the direction of supervisors. They normally gain experience by operating one piece of equipment. With time, they have the opportunity to operate a variety of equipment. Eventually, construction equipment operators have the opportunity to become construction superintendents.

FLIGHT ENGINEERS

Navy
Air Force
Marine Corps
Coast Guard

The military operates thousands of airplanes and helicopters. Pilots and air crew members rely upon trained personnel to keep aircraft ready to fly. Flight engineers inspect airplanes and helicopters before, during, and after flights to ensure safe and efficient operations. They also serve as crew members aboard military aircraft.

What They Do

Flight engineers in the military perform some or all of the following duties:

- Inspect aircraft before and after flights, following pre- and post-flight checklists
- Plan and monitor the loading of passengers, cargo, and fuel
- Assist pilots in engine start-up and shut-down
- Compute aircraft load weights and fuel distribution
- Compute fuel consumption using airspeed data, charts, and calculators
- Monitor engine instruments and adjust engine controls following pilot orders
- Check fuel, pressure, electrical, and other aircraft systems during flight
- Inform pilot of aircraft performance problems and recommend corrective action

Training Provided

Job training consists of 17 to 24 weeks of classroom instruction and practical experience in aircraft inspection. Course content typically includes:

- Operation of electronic, pressure, and fuel systems
- Inspection of aircraft engines, structures, and systems
- Operation of aircraft engine instrument controls
- Preparation of aircraft performance records and logs

Further training occurs on the job during flight operations.

Special Requirements

Although there are women flight engineers in the military, some specialties in this occupation are open only to men.

Work Environment

Flight engineers live and work on air bases or aboard ships in all areas of the world. They fly in hot and cold climates and in all types of weather.

Physical Demands

Flight engineers, like pilots and navigators, have to be mentally alert and physically sound to perform their job. They must be in top physical shape and pass a special physical exam to qualify for flight duty.

Helpful Attributes

Helpful school subjects include general mathematics and shop mechanics. Helpful attributes include:

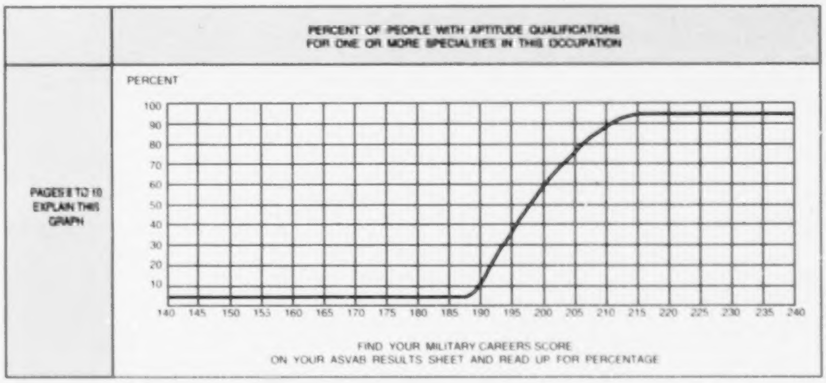
- Skill in using wiring diagrams and maintenance manuals
- Interest in working with mechanical systems and equipment
- Strong desire to fly
- Ability to work as a member of a team

Civilian Counterparts

Civilian flight engineers work for passenger and cargo airline companies. They perform the same duties as in the military.

Opportunities

The services have about 2,500 flight engineers. On average, they need about 40 new flight engineers each year. After receiving their "air crew qualified" rating, they are assigned to an airplane or helicopter flying unit. With experience, they work more independently and may supervise or train others. They have the opportunity to become flight engineer chiefs or air crew chiefs.


PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS
FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PETROLEUM SUPPLY SPECIALISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Ships, airplanes, trucks, tanks, and other military vehicles require large amounts of fuel and lubricants. These and other petroleum products require special storage and handling. Petroleum supply specialists store and ship petroleum products, such as oil, fuel, compressed gas, and lubricants.

What They Do

Petroleum supply specialists in the military perform some or all of the following duties:

- Connect hoses and valves and operate pumps to load petroleum products into tanker trucks, airplanes, ships, and railroad cars
- Test oils and fuels for pollutants
- Repair pipeline systems, hoses, valves, and pumps
- Check the volume and temperature of petroleum and gases in tankers, barges, and storage tanks
- Prepare storage and shipping records
- Store and move packaged petroleum products using forklifts

Physical Demands

Petroleum supply specialists may have to perform moderate to heavy lifting.

Work Environment

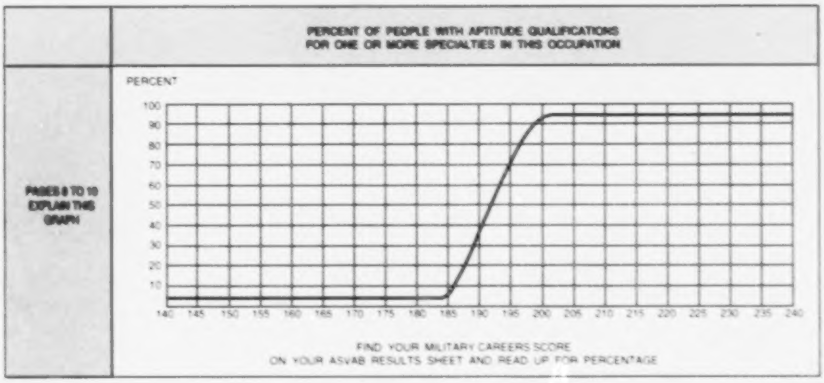
Petroleum supply specialists work outdoors in all types of weather while filling storage tanks and refueling airplanes, ships, and tankers.

Training Provided

Job training consists of 4 to 8 weeks of classroom instruction, including practice in using petroleum pumping equipment. Course content typically includes:

- Testing oil and fuels
- Operating airplane refueling systems and equipment
- Operating pumps, pipelines, and tanker equipment
- Planning and scheduling petroleum transport
- Safety regulations and procedures for handling dangerous materials

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for one specialty in this occupation.



Helpful Attributes

Helpful school subjects include shop mechanics and business math. Helpful attributes include:

- Interest in working with machines and equipment
- Ability to follow spoken instructions
- Preference for physical work

Civilian Counterparts

Civilian petroleum supply specialists work for oil refineries, pipeline companies, and tanker truck and ship lines. They may also refuel airplanes at large airports. They perform many of the same duties as military petroleum supply specialists.

Opportunities

The services have about 14,100 petroleum supply specialists. On average, they need about 2,300 new specialists each year. After training, specialists work in teams while performing oil and fuel pumping operations. Each team works under the direction of a supervisor. With experience, petroleum supply specialists may become team leaders, pipeline or pump station supervisors, or petroleum storage supervisors.

QUARTERMASTERS AND BOAT OPERATORS

Army
Navy
Air Force
Coast Guard

The military operates many small boats for amphibious troop landings, harbor patrols, and transportation over short distances. Quartermasters and boat operators navigate and pilot many types of small watercraft, including tugboats, PT boats, gunboats, and barges.

What They Do

Quartermasters and boat operators in the military perform some or all of the following duties:

- Direct the course and speed of boats
- Consult maps, charts, weather reports, and navigation equipment
- Pilot tugboats when towing and docking barges and large ships
- Operate amphibious craft during troop landings
- Maintain boats and deck equipment
- Operate ship-to-shore radios
- Keep ship logs

Training Provided

Job training consists of 6 to 22 weeks of classroom instruction including practice in boat operations. Course content typically includes:

- Boat handling procedures
- Log and message-handling procedures
- Use of compasses, radar, charts, and other navigational aids
- Navigational mathematics

Work Environment

Quartermasters and boat operators work aboard all types of boats and in all types of weather conditions. When not piloting boats, they may work on or below deck repairing boats and equipment or overseeing cargo storage. When ashore, they may work in offices that make nautical maps or in harbor management offices. Some boats are operated in combat situations.

Helpful Attributes

Helpful school subjects include mathematics. Helpful attributes include:

- Ability to work with mathematical formulas
- Interest in sailing and navigation
- Ability to follow detailed instructions and read maps

Civilian Counterparts

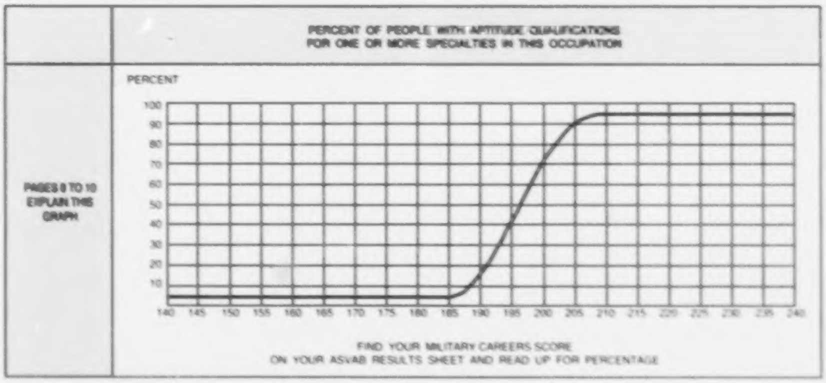
Civilian quartermasters and boat operators may work for shipping and cruise lines, piloting tugboats, ferries, and other small vessels. They perform duties similar to military quartermasters and boat operators. Depending upon specialty, they may also be called tugboat captains, motorboat operators, navigators, or pilots.

Physical Demands

Quartermasters and boat operators may have to stand for several hours at a time. They must be able to speak clearly. Some specialties require normal depth perception and hearing.

Opportunities

The services have about 5,300 quartermasters. On average, they need about 300 new quartermasters and boat operators each year. After job training, new quartermasters and boat operators assist more experienced enlisted operators in maintaining logs, handling passengers, operating navigational equipment, and keeping charts. After gaining experience, they perform more difficult tasks, such as operating navigational equipment and calculating ship position. In time, they pilot boats and help train new quartermasters and boat operators.



SEAMEN

Army
Navy
Air Force
Coast Guard

All ships must have teams of individuals with "jack-of-all-trades" skills who make things run smoothly above deck. Seamen perform many duties to help operate and maintain military ships, boats, and submarines.

What They Do

Seamen in the military perform some or all of the following duties:

- Operate hoists, cranes, and winches to load cargo or set gangplanks
- Operate and maintain on-deck equipment and ship rigging
- Supervise firefighting and damage control exercises
- Handle lines to secure vessels to wharves or other ships
- Stand watch for security, navigation, or communications
- Supervise crews painting and maintaining decks and sides of ships

Physical Demands

Seamen may have to climb ships' rigging and perform work at heights. Their work often involves moderate to heavy lifting.

Work Environment

Seamen and deckhands work aboard all types of ships and submarines. On ships, they often work outdoors on deck while servicing shipboard equipment.

Training Provided

Although classroom training of 6 to 12 weeks is provided to seamen, most training occurs on the job. Training programs vary depending on service and specialty.

Helpful Attributes

Helpful school subjects include mathematics and shop mechanics. Helpful attributes include:

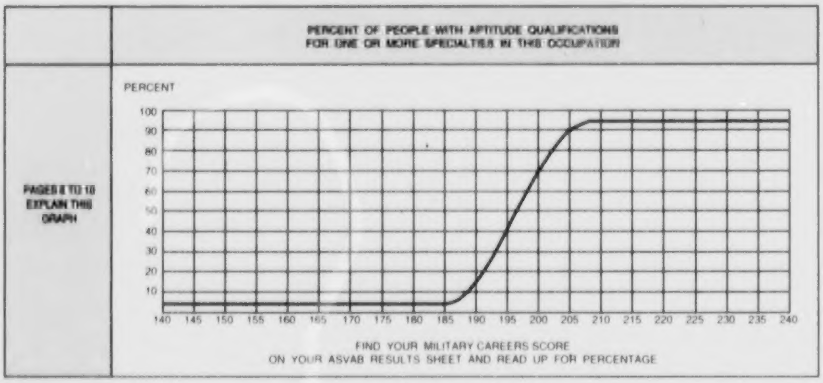
- Ability to work closely with others
- Interest in sailing and being at sea
- Preference for physical work

Civilian Counterparts

Civilian seamen work primarily for shipping companies, sometimes called the Merchant Marine. They also work for cruise ship lines. They perform many duties similar to military seamen. They are called able seamen, deckhands, or boatswains.

Opportunities

The services have about 38,900 seamen. On average, the services need about 16,400 new seamen each year. New seamen work together on teams led by experienced supervisors. Through practice, they learn the many tasks they must perform. In time, seamen supervise one or more teams. Eventually, they may become managers responsible for planning and directing the work of many seamen. Often, seamen receive additional training that prepares them for other occupations in their service.



TRUCK DRIVERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses trucks and buses to transport its troops, equipment, and supplies. Together, the services own and operate about 50,000 heavy trucks and buses. Truck drivers operate all types of heavy military vehicles. They drive fuel or water tank trucks, semi-tractor trailers, heavy troop transports, and passenger buses.

What They Do

Truck drivers in the military perform some or all of the following duties:

- Read travel instructions to determine travel routes, arrival dates, and types of cargo
- Make sure vehicles are loaded properly
- Check oil, fuel and other fluid levels, and tire pressure
- Drive vehicles over all types of roads, traveling alone or in convoys
- Keep records of mileage driven and fuel and oil used
- Wash vehicles and perform routine maintenance and repairs

Helpful Attributes

Helpful school courses include driver education. Helpful attributes include:

- Interest in trucks and truck driving
- Interest in mechanics

Training Provided

Job training consists of 7 to 8 weeks of classroom instruction, including practice in driving trucks. Course content typically includes:

- Accident prevention
- Safety check procedures
- International road signs
- Basic vehicle maintenance

The Army and the Marine Corps offer certified apprenticeship programs for one specialty in this occupation.

Work Environment

Truck and bus driving involves long periods of sitting. Drivers sometimes must change heavy tires.

Civilian Counterparts

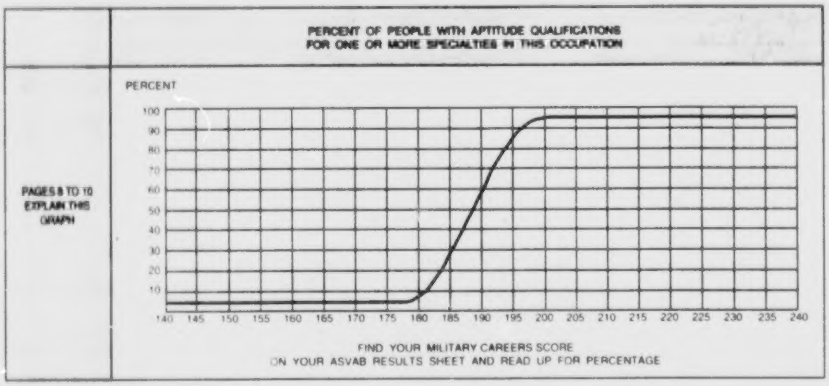
Civilian truck drivers work for trucking companies, moving companies, bus companies, and businesses with their own delivery fleets. They perform duties similar to military truck drivers. They may specialize as tractor-trailer truck drivers, tank truck drivers, heavy truck drivers, or bus drivers.

Physical Demands

Normal color vision is required to read road maps.

Opportunities

The services have about 23,800 truck drivers. On average, they need about 4,400 new truck drivers each year. After job training, truck drivers are assigned to motor pools or motor transport units. They generally work without close supervision. In time, truck drivers may advance to supervisory positions assisting in the management of motor transport units.



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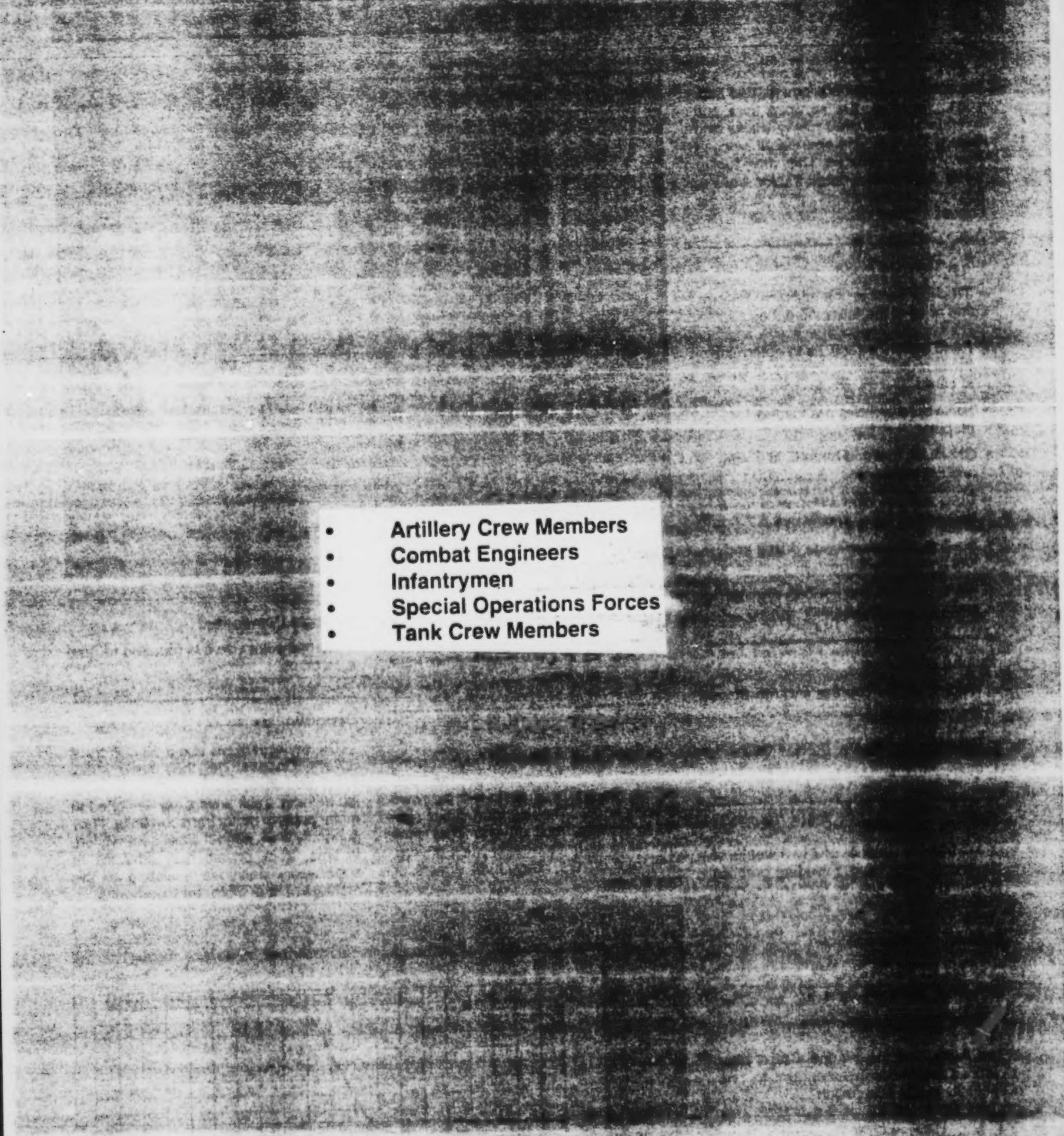
Combat Specialty Occupations



- Artillery Crew Members
- Combat Engineers
- Infantrymen
- Special Operations Forces
- Tank Crew Members

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ARTILLERY CREW MEMBERS

Army
Navy
Marine Corps
Coast Guard

Artillery includes weapons that fire large shells or missiles. The military uses artillery to support infantry and tank units in combat. Artillery is also used to protect land and sea forces from air attack. Artillery crew members position, direct, and fire artillery guns, cannons, howitzers, missiles, and rockets to destroy enemy positions and aircraft. They normally specialize by type of artillery.

What They Do

Artillery crew members in the military perform some or all of the following duties:

- Determine target location using computers or manual calculations
- Set up and load artillery weapons
- Prepare ammunition, fuses, and powder for firing
- Fire artillery weapons according to instructions from artillery officers
- Clean and maintain artillery weapons
- Drive trucks and self-propelled artillery

Physical Demands

Artillery crew members must have physical stamina to perform strenuous activities for long periods without rest. They are also required to have normal color vision to identify color-coded ammunition and to read maps and charts.

Work Environment

Artillery crew members work outdoors when on land maneuvers. Some work in sheltered fire control stations. At sea, they mainly work below deck.

Helpful Attributes

Helpful attributes include:

- Ability to think and remain calm under stress
- Ability to work as a member of a team
- Interest in cannon and rocket operations
- Ability to perform a wide variety of duties

Civilian Counterparts

Although the job of artillery crew member has no equivalent in civilian life, the close teamwork, discipline, and leadership experiences it provides are helpful in many civilian jobs.

Special Requirements

This occupation is open only to men.

Training Provided

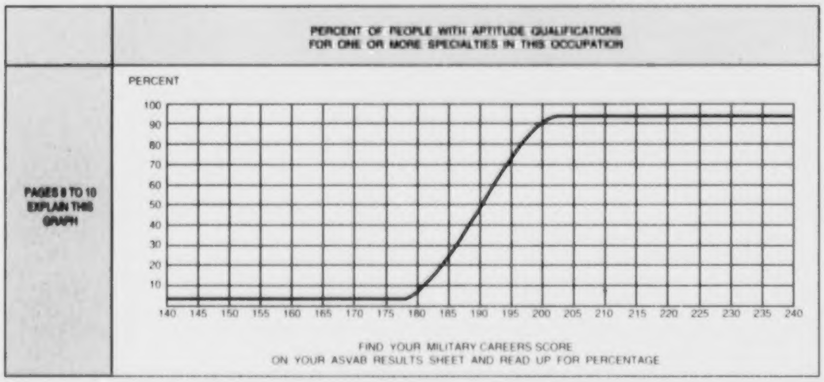
Job training consists of 10 to 14 weeks of classroom instruction and field training under simulated combat conditions. Course content typically includes:

- Methods of computing target locations
- Ammunition-handling techniques
- Gun, missile, and rocket system operations
- Artillery tactics

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for one specialty in this occupation.

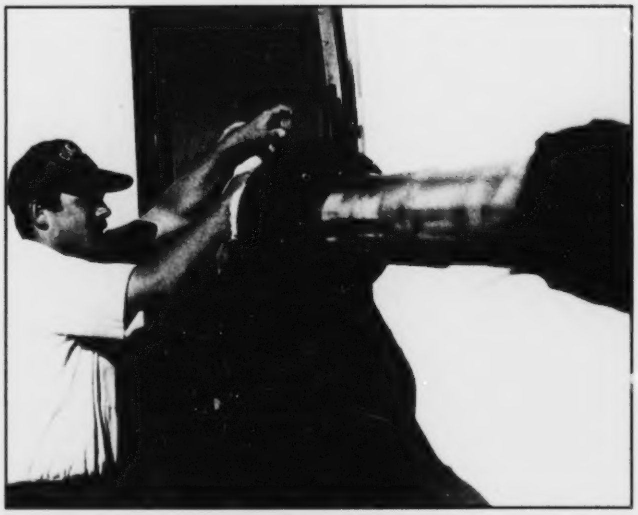
Opportunities

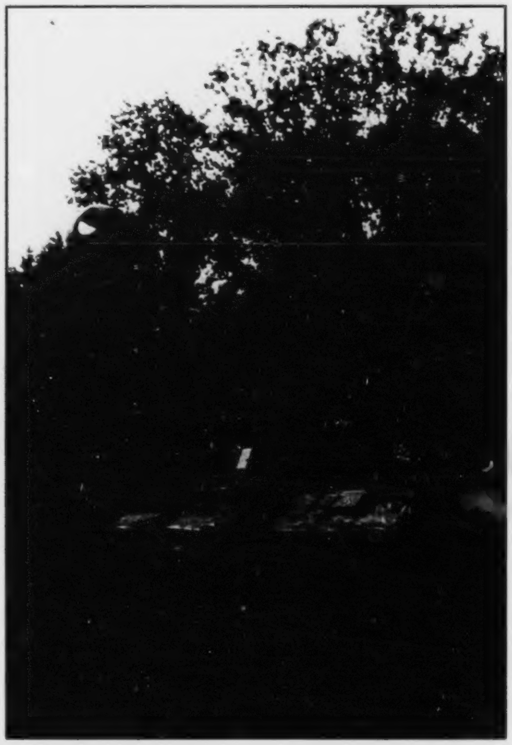
The services have about 64,300 artillery crew members. On average, they need about 11,500 new crew members each year. After job training, new crew members work as part of an artillery team. Leadership ability and job performance are the most important factors for advancement in the artillery field. Those with leadership potential may assume supervisory positions. In time, they may lead gun crews or supervise firing batteries consisting of several large guns or missiles.


PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH

FIND YOUR MILITARY CAREERS SCORE ON YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE





COMBAT ENGINEERS

Army
Marine Corps

Combat situations often require rapid travel across difficult terrain and swift-flowing rivers. A combination of combat ability and building skill is necessary to do field construction for fighting forces.

What They Do

Combat engineers perform some or all of the following duties:

- Construct trails, roads, and temporary shelters
- Erect floating or prefabricated bridges
- Lay and clear mine fields and booby traps
- Construct field fortifications, such as bunkers and gun emplacements
- Erect camouflage and other protective barriers for artillery and troop positions
- Load, unload, and move supplies and equipment, using planes, helicopters, trucks, and amphibious vehicles
- Construct airfields and perform ground traffic control duties
- Participate in combat operations as infantrymen

Special Qualifications

This occupation is open only to men.

Helpful Attributes

Helpful school subjects include mathematics, general science, and industrial arts. Helpful attributes include:

- Ability to use hand and power tools
- Ability to think and remain calm under stress
- Preference for working outdoors

Training Provided

Job training for combat engineers is mainly provided on the job. On-the-job training consists of manual work in a variety of construction projects covering the following:

- Basic construction methods
- Bridge building
- Road maintenance and repair
- Rough carpentry and rigging
- Use of hand and power tools

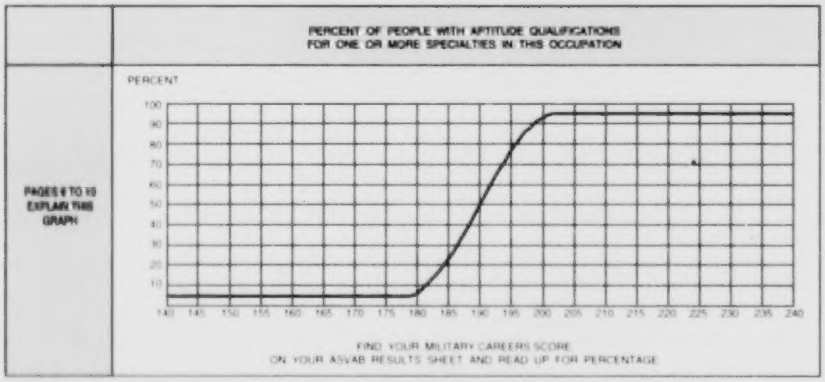
The Marine Corps offers a 6-week course in basic combat engineering skills. Combat training in infantry skills is also provided to combat engineers.

Physical Demands

Combat engineers must meet very demanding physical requirements. They need agility and balance and must be able to perform strenuous physical activities over long periods of time. Combat engineers lift and move heavy objects. Some specialties require good swimming abilities.

Work Environment

Because combat engineers must be prepared to support operations anywhere in the world, they work and train for long hours under all kinds of weather conditions and in all climates. Combat engineers work, eat, and sleep outdoors during training exercises and in real combat situations. Most of the time, combat engineers are assigned to military bases.

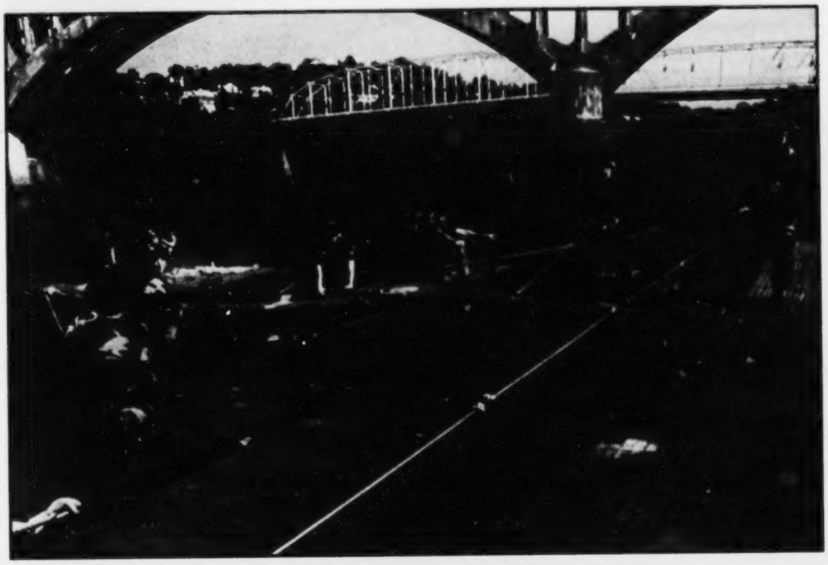


Civilian Counterparts

Although the job of combat engineer has no direct equivalent in civilian life, experience as a combat engineer is related to occupations in several civilian fields. These include the logging, mining, construction, shipping, and landscaping industries. Civilians in these jobs are called forestry aides, loggers, blasters, and construction workers.

Opportunities

The military has about 10,900 combat engineers. On average, the services need about 3,100 new combat engineers each year. After basic training, combat engineers are assigned to jobs requiring the application of basic skills and use of common construction tools. After gaining knowledge and improving skills, they may be selected for additional training in various construction specialties, such as road and bridge building. Eventually, they may supervise others and assist in managing engineering units.



INFANTRYMEN

Army
Marine Corps

The infantry is the main land combat force of the military. In peacetime, the infantry's role is to stay ready to defend our country. In combat, the role of the infantry is to capture or destroy enemy ground forces and repel enemy attacks. Infantrymen operate weapons and equipment to engage and destroy enemy ground forces. Turn to page 380 for more information about infantrymen.

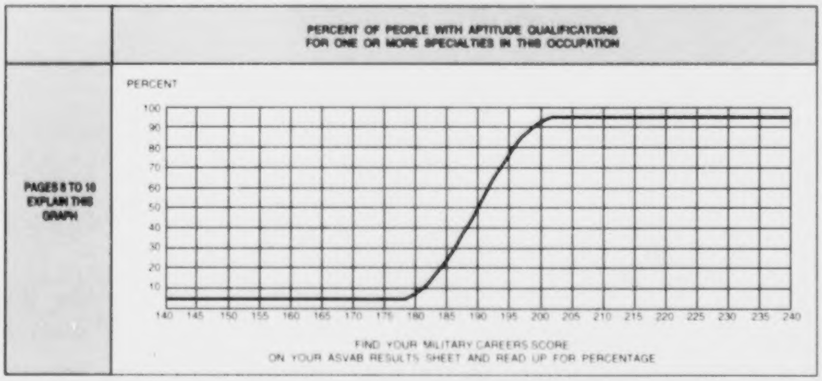
What They Do

Infantrymen perform some or all of the following duties:

- Operate, clean, and store automatic weapons, such as rifles and machine guns
- Parachute from troop transport airplanes while carrying weapons and supplies
- Fire armor-piercing missiles from hand-held antitank missile launchers
- Carry out scouting missions to spot enemy troop movements and gun locations
- Operate two-way radios and signal equipment to relay battle orders
- Drive vehicles mounted with machine guns or small missiles
- Perform hand-to-hand combat drills that involve martial arts tactics
- Set firing angles and fire mortar shells at targets
- Dig foxholes, trenches, and bunkers for protection against attacks

Training Provided

Infantry training starts with basic training of about 7 or 8 weeks. Advanced training in infantry skills lasts for another 8 weeks. While some of the training is in the classroom, most is in the field under simulated combat conditions. In reality, training for an infantry soldier never stops. Infantry soldiers keep their skills sharp through frequent squad maneuvers, target practice, and war games. War games conducted without live ammunition allow soldiers to practice scouting, troop movement, surprise attack, and capturing techniques.



Physical Demands

The infantry has very demanding physical requirements. Infantrymen must perform strenuous physical activities, such as marching while carrying equipment, digging foxholes, and climbing over obstacles. Infantrymen need good hearing and clear speech to use two-way radios, and good night vision and depth perception to see targets and signals.

Special Requirements

This occupation is open only to men.

Helpful Attributes

Helpful attributes include:

- Readiness to accept a challenge and face danger
- Ability to stay in top physical condition
- Interest in working as a member of a team

Work Environment

Because infantrymen must be prepared to go anywhere in the world they are needed, they work and train in all climates and weather conditions. During training exercises, as in real combat, infantrymen work, eat, and sleep outdoors. Most of the time, however, infantrymen work on military bases.

Civilian Counterparts

Although the job of infantrymen has no equivalent in civilian life, the close teamwork, discipline, and leadership experiences it provides are helpful in many civilian jobs.

Opportunities

The military has about 64,600 infantrymen. On average, the services need about 11,400 new infantrymen each year. Leadership ability and job performance are the main factors for advancement in the infantry. Those who have the ability to motivate, train, and supervise others assume greater responsibility. As infantrymen advance in their careers, they become more involved in planning and supervision.

SPECIAL OPERATIONS FORCES

Army
Navy
Air Force
Marine Corps

When the military has difficult and dangerous missions to perform, they call upon special operations teams. These elite combat forces stay in a constant state of readiness to strike anywhere in the world on a moment's notice. Special operations forces team members conduct offensive raids, demolitions, intelligence, search and rescue, and other missions from aboard aircraft, helicopters, ships, or submarines. Due to the wide variety of missions, special operations forces team members are trained swimmers, parachutists, and survival experts, in addition to being combat trained. Turn to page 404 for more information about special operations forces.

What They Do

Special operations forces team members in the military perform some or all of the following duties:

- Go behind enemy lines to recruit, train, and equip friendly forces for guerrilla raids
- Carry out demolition raids against enemy military targets, such as bridges, railroads, and fuel depots
- Clear mine fields, both underwater and on land
- Conduct missions to gather intelligence information on enemy military forces
- Conduct offensive raids or invasions of enemy territories
- Destroy enemy ships in coastal areas, using underwater explosives

Special Requirements

This occupation is open only to men.

Physical Demands

The special operations forces have very demanding physical requirements. Good eyesight, night vision, and physical conditioning are required to reach mission objectives by parachute, overland, or underwater. Also required is excellent hand-eye coordination to detonate or deactivate explosives. In most instances, special operations forces team members are required to be qualified divers, parachutists, and endurance runners.

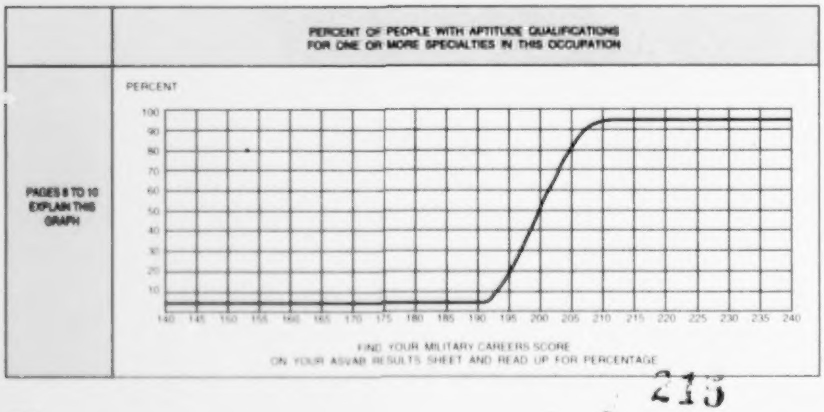
Helpful Attributes

Helpful attributes include:

- Ability to work as a team member
- Readiness to accept a challenge and face danger
- Ability to stay in top physical condition
- Ability to remain calm in stressful situations

PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS FOR ONE OR MORE SPECIALTIES IN THIS OCCUPATION

PAGES 8 TO 10 EXPLAIN THIS GRAPH



Work Environment

Because special operations forces team members must be prepared to go anywhere in the world they are needed, they train and work in all climates, weather conditions, and settings. They may dive from submarines or small underwater craft. Special forces team members may also be exposed to harsh temperatures, often without protection, during missions in enemy-controlled areas. Most of the time, however, they work and train on military bases or ships and submarines.

Training Provided

Job training consists of up to 72 weeks of formal classroom training and practice exercises. Course content typically includes:

- Physical conditioning, parachuting, swimming, and scuba diving
- Using land warfare weapons and communications devices
- Handling and using explosives
- Bomb and mine disposal

Additional training occurs on the job. Basic skills are kept sharp through frequent practice exercises under simulated mission conditions.

Civilian Counterparts

Although the job of special operations forces team members has no equivalent in civilian life, training in explosives, bomb disposal, scuba diving, and swimming may be helpful in such civilian jobs as blaster, police bomb disposal specialist, diver, or swimming instructor. The discipline and dependability of special operations forces are assets in many civilian occupations.

Opportunities

The services have about 27,600 special operations team members. On average, they need about 3,900 new team members each year. After training, new team members practice their skills under close supervision. With experience, they may supervise and train other team members. They may also work alone on certain missions. Eventually, they may become team leaders.

TANK CREW MEMBERS

Army
Marine Corps

In peacetime, the role of tank and armor units is to stay ready to defend our country anywhere in the world. In combat, their role is to operate tanks and amphibious assault vehicles to engage and destroy the enemy. Tanks also conduct scouting missions and support infantry units during combat. Tank crew members work as a team to operate armored equipment and fire weapons to destroy enemy positions. Tank crew members normally specialize by type of armor, such as tank or amphibious assault vehicle.

What They Do

Tank crew members in the military perform some or all of the following duties:

- Drive tanks or amphibious assault vehicles in combat formations over roadways, rough terrain, and in heavy surf
- Operate target sighting equipment to aim guns
- Load and fire guns
- Operate two-way radios and signaling equipment to receive and relay battle orders
- Gather and report information about the terrain, enemy strength, and target location
- Perform preventive maintenance on tanks, guns, and equipment
- Read maps, compasses, and battle plans

Special Requirements

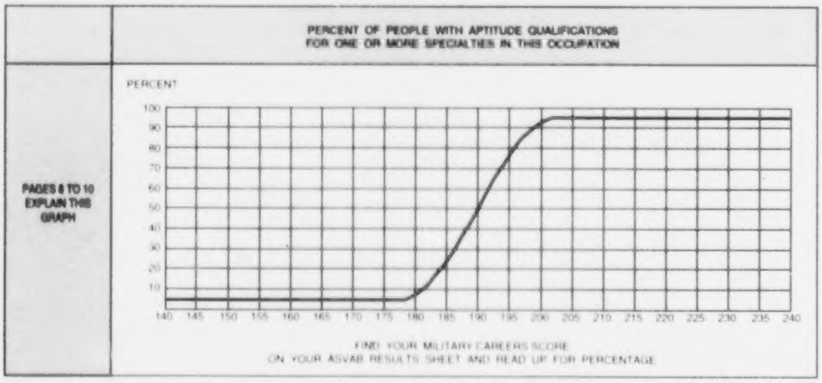
This occupation is open only to men.

Training Provided

Job training consists of 6 to 9 weeks of classroom and field training under simulated combat conditions. Course content typically includes:

- Tank operations
- Armor offensive and defensive tactics
- Tank gunnery
- Map reading
- Scouting techniques

Further training occurs on the job and through training exercises. Tank crews often take part in war games, which simulate combat conditions. They divide into teams and practice battle tactics on military exercise ranges. Instead of firing live ammunition, tanks "shoot" harmless light beams at one another to determine war game victors.



Physical Demands

Tank crew members must be in good physical condition and have exceptional stamina. They must be able to work inside the confined area of a tank for long periods of time. Good vision and normal color vision are required in order to read maps, drive vehicles around obstacles, and locate targets.

Helpful Attributes

Helpful attributes include:

- Ability to work as a member of a team
- Readiness to accept a challenge and face danger
- Ability to follow directions and execute orders quickly and accurately

Work Environment

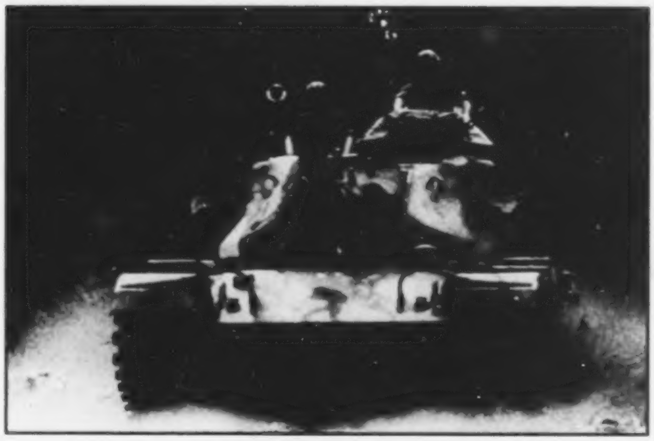
Tank crew members, like other combat troops, work in all climates and weather conditions. During training exercises, as in real combat conditions, tank crew members work, eat, and sleep outdoors and in tanks.

Civilian Counterparts

Although the job of tank crew member has no equivalent in civilian life, the close teamwork, discipline, and leadership experiences it provides are helpful in many civilian jobs.

Opportunities

The services have about 31,500 tank crew members. On average, they need about 5,100 new tank crew members each year. After job training, new tank crew members help operate weapons and control their armored vehicles. Leadership potential and job performance are the most important factors for advancement in this field. In time, crew members may become tank or vehicle commanders.



IS 218

Military Officer Occupations

How to Read the Officer Occupational Descriptions

The purpose of *Military Careers* is to introduce students, parents, and counselors to the military world-of-work. *Military Careers* can be used to explore the many employment and training opportunities available in the enlisted and officer forces of the Army, Navy, Air Force, Marine Corps, and Coast Guard.

Military Careers contains descriptions of 197 military occupations. The Officer Occupations section contains descriptions of 70 officer occupations. Each officer description has standard sections, as shown in the example on the opposite page. An explanation for each section of the description is also provided.

When reading any of the 70 officer occupational descriptions, remember that it is a summary of similar job specialties across all of the military services. For example, the Air Traffic Control Managers description in the sample represents 10 distinct air traffic controller specialties across four services. Therefore, individual job specialties may differ somewhat from the general occupations described in this book. If you are interested in learning more about a particular service or occupation, you should contact a recruiter for details.

Occupational Title

The occupational title names the military occupation. An alphabetical listing of titles is in the index beginning on page 466 in *Military Careers*.

What They Do

"What They Do" describes the main work activities performed by workers in the occupation. Because job specialties vary from one service to another, some of the activities listed may not apply to all services.

Work Environment

"Work Environment" describes the typical work settings and conditions for the occupation. Work settings may be indoors or outdoors, on land, aboard ships, or in aircraft.

Summary

"Summary" contains background information about the military occupation.

Physical Demands

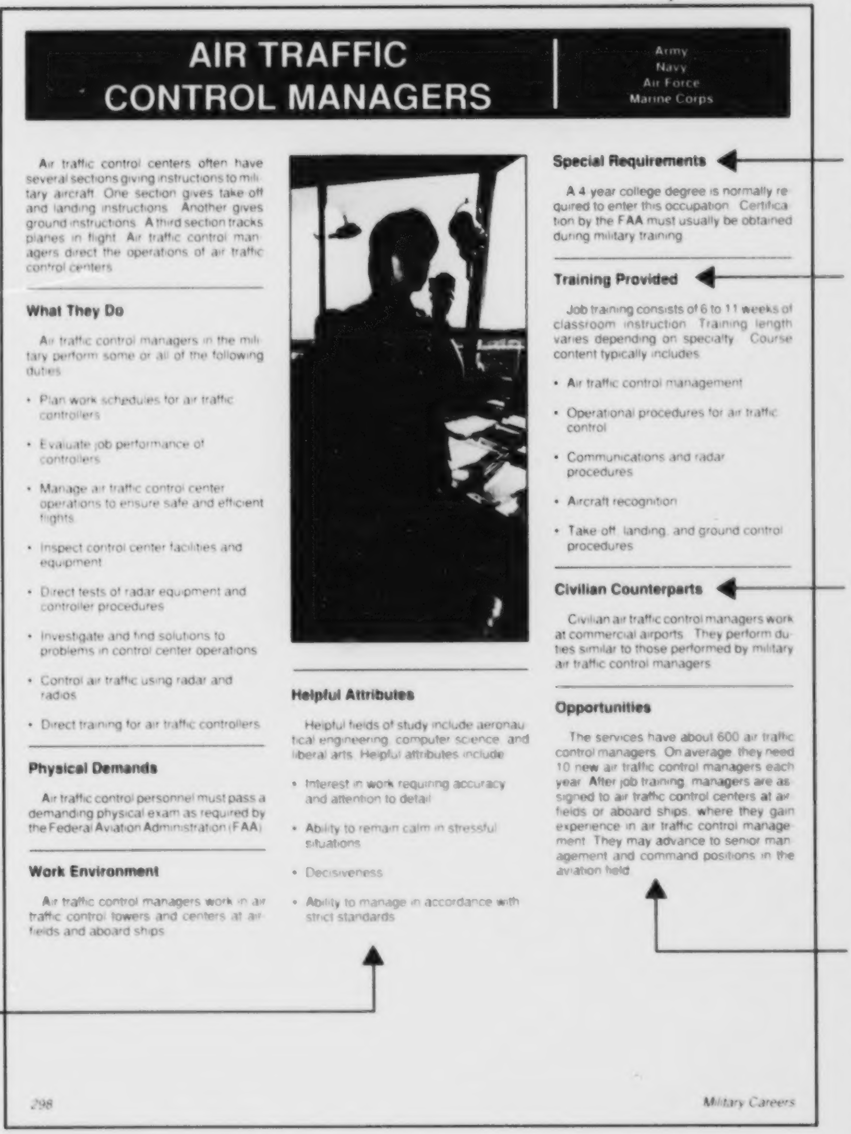
Some military occupations place physical demands on workers. For example, strength for moderate or heavy lifting is a common physical demand noted in *Military Careers*. Other physical demands include running, climbing, swimming, clear speech, and special vision requirements.

Helpful Attributes

"Helpful Attributes" include interests, fields of college study, experience, and other personal characteristics that may be helpful for training and working in the military occupation. These are not requirements.

Military Service Representation

The military services listed next to the title offer employment and training opportunities in the occupation. Not all services offer every occupation described in *Military Careers*.



AIR TRAFFIC CONTROL MANAGERS

Army
Navy
Air Force
Marine Corps

Air traffic control centers often have several sections giving instructions to military aircraft. One section gives take-off and landing instructions. Another gives ground instructions. A third section tracks planes in flight. Air traffic control managers direct the operations of air traffic control centers.

What They Do

Air traffic control managers in the military perform some or all of the following duties:

- Plan work schedules for air traffic controllers
- Evaluate job performance of controllers
- Manage air traffic control center operations to ensure safe and efficient flights
- Inspect control center facilities and equipment
- Direct tests of radar equipment and controller procedures
- Investigate and find solutions to problems in control center operations
- Control air traffic using radar and radios
- Direct training for air traffic controllers

Physical Demands

Air traffic control personnel must pass a demanding physical exam as required by the Federal Aviation Administration (FAA).

Work Environment

Air traffic control managers work in air traffic control towers and centers at airfields and aboard ships.

Helpful Attributes

Helpful fields of study include aeronautical engineering, computer science, and liberal arts. Helpful attributes include:

- Interest in work requiring accuracy and attention to detail
- Ability to remain calm in stressful situations
- Decisiveness
- Ability to manage in accordance with strict standards

Special Requirements

A 4-year college degree is normally required to enter this occupation. Certification by the FAA must usually be obtained during military training.

Training Provided

Job training consists of 6 to 11 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Air traffic control management
- Operational procedures for air traffic control
- Communications and radar procedures
- Aircraft recognition
- Take-off, landing, and ground control procedures

Civilian Counterparts

Civilian air traffic control managers work at commercial airports. They perform duties similar to those performed by military air traffic control managers.

Opportunities

The services have about 600 air traffic control managers. On average, they need 10 new air traffic control managers each year. After job training, managers are assigned to air traffic control centers at airfields or aboard ships, where they gain experience in air traffic control management. They may advance to senior management and command positions in the aviation field.

298 *Military Careers*

Special Requirements

Special requirements must be met to enter certain occupations. College degree requirements, professional certifications and licenses are examples of special requirements. This section also identifies combat occupations from which women are excluded by law.

Training Provided

The military provides job training for most of its new officers. Most job training is provided in a classroom setting. For some occupations, training is provided on the job. In "Training Provided," the length of training and course content are summarized. Course content and length of training may vary for each service.

Civilian Counterparts

Most military occupations are comparable to one or more civilian occupations because they require similar duties and training. "Civilian Counterparts" identifies these civilian occupations and the kinds of companies or organizations in which they are located. The *Dictionary of Occupational Titles* (DOT) Code Index beginning on page 454 provides a complete listing of counterpart civilian occupations for each military occupation.

Opportunities

"Opportunities" contains information on the total number of officers working in the occupation and the average annual need for new personnel. Military career advancement in the occupation is also summarized in this section.

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General Information on Officer Occupations

General Information on Officer Occupations

For the last 40 years, the military's personnel requirements and overall strategies have been shaped by the need to be prepared to deal with a short-notice, global war with the Soviet Union. Given the dramatic developments in Eastern Europe and the Soviet Union, the military services are refocusing their strategy on a peacetime mission and on readiness for regional conflicts and contingencies.

As the military plans for the 1990s, they will reduce the numbers of active-duty officers. Overall, officers will be downsized from 300,000 to about 225,000 or approximately 25 percent. This reduction will occur from 1991 through 1995. There are no planned changes for reductions in the Reserves or the Coast Guard.

Although the active-duty military services will decline in size, they will still need substantial numbers of new officers. New officers are usually college graduates with bachelor's degrees. They must meet the physical, academic, and moral standards set by their service to be accepted into programs for becoming an officer (commissioning programs). The qualifications required for acceptance into the various programs are described in this section on page 213.

Officers usually begin their careers gaining experience in their chosen occupational field. Working closely with more senior officers, they also begin supervising small groups of enlisted people. As officers become more experienced and advance in responsibility and rank, they direct more enlisted personnel, begin to lead other officers, and may eventually become the senior leaders and managers of the military. Commanding officers are responsible for every detail of U.S. ground and naval forces, ships, flying squadrons, and amphibious assault forces.

MILITARY OFFICER OCCUPATIONS

Officers lead and manage activities in every occupational specialty in the military. They must be able to learn detailed information quickly to be effective in the changing assignments and environments they will experience during their careers.

One of the characteristics of the successful leader is willingness to serve. Officers serve their country daily, sometimes placing themselves in danger. They are responsible for the well-being, training, and readiness of the people they lead.

Officers are also trained in specific occupational skills. They manage the military supply system and care for the health of combat and support personnel and their dependents. They analyze military intelligence and lead technicians on land or aboard ships.

Some officers, such as infantry and submarine officers, work in jobs directly related to combat. These occupations are open only to men. In other occupations, certain combat-related duty assignments are closed to women. According to federal law and policy, women may not be assigned to duty where there is a high probability of direct exposure to combat.

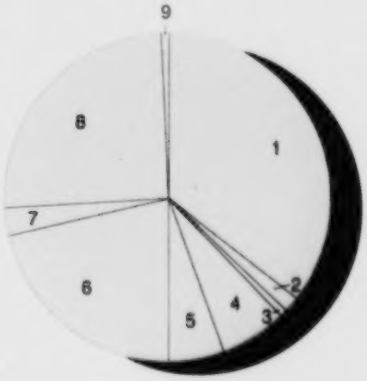

Figure 5
Distribution of Officers by Occupational Group

1. Executive, Administrative, and Managerial
2. Human Services
3. Media and Public Affairs
4. Health Diagnosing and Treating Practitioner
5. Health Care
6. Engineering, Science, and Technical
7. Service
8. Transportation
9. Combat Specialty

A large number of men and women in the military work in occupations that support the combat forces. They are essential to the readiness and strength of the combat forces.

Together, the five services offer employment opportunities in over 1,500 officer job specialties. To help you explore military officer careers, these specialties are grouped into 70 occupations in this book. The 70 occupations are organized into nine broad groups:

- Executive, Administrative, and Managerial
- Human Services
- Media and Public Affairs
- Health Diagnosing and Treating Practitioner
- Health Care
- Engineering, Science, and Technical
- Service
- Transportation
- Combat Specialty

Figure 5 shows the distribution of officers across the nine occupational groups. Over two-thirds of all military officer occupations have counterparts in the civilian world-of-work. For example, there are personnel managers, optometrists, electronic engineers, lawyers, and public affairs officers in both the military and civilian work forces.

The services offer training and advancement opportunities in each occupation. No matter which occupation newly commissioned officers enter, they find a well-defined career path leading to increased responsibility and higher pay.

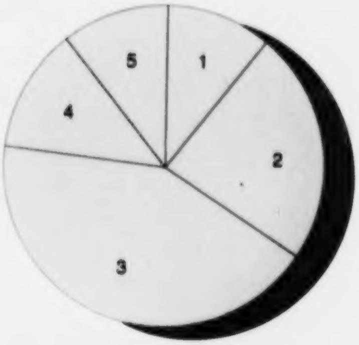

Figure 6
Pathways to Newly Commissioned Officers

1. Service Academies
2. Officer Candidate School (OCS) and Officer Training School (OTS)
3. Reserve Officers' Training Corps (ROTC)
4. Direct Appointment
5. Other

GENERAL QUALIFICATION REQUIREMENTS

Each year, approximately 23,000 men and women become commissioned officers in the military. The term "commissioned" refers to the certification that officers receive upon meeting all qualification requirements. The certification confers military rank, authority, and obligation. To join the military as a commissioned officer, applicants must have a four-year college degree. Certain scientific, technical, and professional fields require an advanced degree. In addition, mental aptitude, physical, and moral standards must be met. The general qualification requirements for military officers are presented in Table 5 on page 213. Specific requirements vary by service. For additional information on officer qualification requirements, see the "Service Information on Officer Occupations" section beginning on page 227. For detailed questions, it is necessary to contact a recruiter.

Pathways to Becoming an Officer

There are four main pathways to becoming a commissioned officer:

- Service Academies
- Officer Candidate School (OCS) and Officer Training School (OTS)
- Reserve Officers' Training Corps (ROTC)
- Direct Appointment.

Figure 6 shows the percentage of newly commissioned officers who became officers through these pathways. A description of each pathway follows:

Service Academies

The four service academies are:

- United States Military Academy at West Point, New York (Army)
- United States Naval Academy at Annapolis, Maryland (Navy and Marine Corps)
- United States Air Force Academy at Colorado Springs, Colorado (Air Force)
- United States Coast Guard Academy at New London, Connecticut (Coast Guard)

The competition for entry into the academies is keen. Among candidates who meet all the eligibility requirements, the academies offer admission to only the most qualified. To be eligible for admission to any of the academies, a young person must be at least 17 years of age, a citizen of the United States, of good moral character, and academically and physically qualified. In addition, candidates for the Army, Navy, and Air Force Academies must have a nomination to be considered for admission. Nominations are not necessary for admission to the Coast Guard Academy. Most candidates seek a nomination from their members of Congress. It is not necessary to know Senators or Representatives personally to receive a nomination from them. The recommended time to apply for nomination is the spring of the junior year in high school.

The academies all offer a four-year program of study leading to a bachelor of science degree in one of many disciplines. Students, called cadets or midshipmen, receive free tuition, room, board, medical and dental care, and a monthly allowance. Graduates receive a commission as a military officer and must serve on active duty for at least five years. Each year, about 13 percent of the military's new officers are graduates of these four academies. For more information about the

Table 5 – General Officer Qualifications*

Age	Must be between 19 and 29 years for OCS/OTS; 17 and 21 years for ROTC; 17 and 22 years for the service academies.
Citizenship Status	Must be U.S. citizen.
Physical Condition	Must meet minimum physical standards listed below. Some occupations have additional physical standards. Height – For males: Maximum - 6'8" Minimum - 4'10" For females: Maximum - 6'8" Minimum - 4'10" Weight – There are minimum and maximum weights, according to age and height, for males and females. Vision – There are minimum vision standards. Overall Health – Must be in good health and pass a medical exam. Certain diseases or conditions may exclude persons from enlistment, such as diabetes, severe allergies, epilepsy, alcoholism, and drug addiction.
Education	Must have a four-year college degree from an accredited institution. Some occupations require advanced degrees or four-year degrees in a particular field.
Aptitude	Must achieve the minimum entry score on an officer qualification test. Each service uses its own officer qualification test.
Moral Character	Must meet standards designed to screen out persons unlikely to become successful officers. Standards cover court convictions, juvenile delinquency, arrests, and drug use.
Marital Status and Dependents	May be either single or married for ROTC, OCS/OTS, and direct appointment pathways. Must be single to enter and graduate from service academies. Single persons with one or more minor dependents are not eligible for officer commissioning.
Waivers	On a case-by-case basis, exceptions (waivers) are granted by individual services for some of the above qualification requirements.

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*Each service sets its own qualification requirements for officers. For additional information on a particular service's requirements, refer to the "Service Information on Officer Occupations" section beginning on page 227, or contact a military recruiter.

service academies, see the "Service Information on Officer Occupations" section beginning on page 227 and your school counselor.

Officer Candidate/Training School

Each service offers a program for college graduates with no prior military training who wish to become military officers. These programs are called Officer Candidate School (OCS) or Officer Training School (OTS), depending on the service. Interested candidates should apply through a local recruiter in the fall of their senior year of college. After graduation, young men and women selected for OCS/OTS join the military as enlisted members for the duration of their OCS/OTS training. Depending on the service, OCS/OTS lasts up to 20 weeks. After successful completion, candidates are commissioned as military officers and have a minimum active-duty service obligation of four years. Each year, about 21 percent of the military's new officers are commissioned through OCS/OTS. For more information, contact a recruiter.

Reserve Officers' Training Corps

Undergraduate students in public or private colleges or universities may receive training to become officers under the Reserve Officers' Training Corps (ROTC). ROTC programs for the Army, Navy, Air Force, and Marine Corps are available in over 1,400 colleges and universities nationwide.

Depending on the service and ROTC option selected, students train for two, three, or four years. Often, they receive scholarships for tuition, books, fees, uniforms and a monthly allowance. In addition to their military and college course work, ROTC candidates perform drills for several hours each week and participate in military training exercises for several weeks each summer. Graduating ROTC candidates become commissioned as military officers and either go on active duty or become members of Reserve or National Guard units. Each year, about 44 percent of the military's new officers are gained through ROTC programs. For more information about service ROTC programs, see the "Service Information on Officer Occupations" section beginning on page 227. For information on the colleges and universities that offer ROTC programs for a particular service, contact a recruiter from that service.

Direct Appointments

Medical, legal, engineering, and religious professionals who are fully qualified in their field may apply to receive direct appointments as military officers. These individuals enter military service and begin practicing their profession with a minimum of military training. The service obligation for officers entering through direct appointment is two years. Some scholarship programs are available to assist students in these fields with their professional schooling in return for several years of service. Each year, direct appointments make up about 11 percent of the military's new officers. For information about opportunities for direct appointment in a particular service, contact a recruiter from that service.

Enlisted Commissioning Programs

In addition to the four main pathways described above, the services each have programs for qualified enlisted personnel to earn commissions as officers. Once selected to an enlisted commissioning program, enlisted personnel must follow one of the four major pathways described above in order to receive their commission. These programs are exclusive, as they account for only 10 percent of newly commissioned officers each year.

SERVICE SUPPORT FOR CAREER ADVANCEMENT

From the time officers are commissioned until the last day of duty, the services play an important role in supporting their career development. The military offers a wide range of training and development opportunities to help each officer build a career. However, to succeed, officers must take advantage of the opportunities provided.

Officer Training and Education

Training and education are ongoing throughout a military officer's career. Although each service has its own programs for officer professional development, all services view training and education, followed by practical experience, as the normal course for officer development. The military provides five kinds of training and educational opportunities to its officers:

- Basic officer training
- Job training
- Advanced training
- Professional military education
- Leadership training.

These five types of training are discussed on the following pages.

1) Basic Officer Training

An important part of every pathway leading to officer commissioning is training on the basic knowledge required to become an officer. The topics covered in this training include:

- The role and responsibilities of the officer
- Military laws and regulations
- Service traditions
- Military customs and courtesies
- Career development
- Military science
- Administrative procedures

In addition, most commissioning pathways involve physical conditioning consisting of calisthenics, running, and drills.

The duration and timing of officer training may vary with the commissioning pathway followed. For example, ROTC candidates receive basic officer training over the course of their two- to four-year ROTC programs. The same is true for cadets or midshipmen at the service academies. In contrast, OCS/OTS candidates receive their basic officer training in the 12- to 20-week OCS/OTS programs they attend after graduation from college.

2) Job Training

After earning their commissions, officers normally receive job training in preparation for their first duty assignment. Depending on the occupational field entered, initial job training may last from several weeks to two years. Officer training, however, does not end after this initial training.

Because officers are the professional leaders of the military, they must develop knowledge of the broad areas they might command. For example, supply officers must understand the entire supply system, from contracting to warehouse management, to one day command supply operations for an entire base. Therefore, supply officers are assigned to several different jobs during their career. Throughout a career, the services provide training to allow officers to maintain and increase their skills. In addition to technical training, the services provide training that focuses on military strategy and history as well as developing the leadership, writing, and management skills required for positions of greater responsibility.

For certain occupations, the military does not provide job training. Doctors, veterinarians, nurses, therapists, dieticians, lawyers, engineers, social workers, and other professionals may only enter the military after they have been fully trained and, in most cases, certified by a state board.

3) Advanced Training

There are advanced training courses for virtually every officer occupation. These courses fall into two basic categories. In the first category are those courses that teach the technical or administrative skills needed for an officer's next assignment. For example, transportation officers with truck and vehicle experience may receive training in landing craft maintenance management before they are transferred to a landing craft assignment.

In the second category are the courses that train officers in the overall mission of their occupation. For example, infantry officers need instruction in coordinating combat actions with artillery and aircraft units, while ship officers need to learn how to coordinate operations of ships and aircraft to hunt submarines.

4) Professional Military Education

Professional military education (PME) prepares officers for the increasingly challenging leadership, planning, operations, and management responsibilities they assume as they rise in rank. PME is highly recommended for career-oriented officers, regardless of their occupational specialty.

PME courses teach techniques for combat-support operations in battle. Officers study military history, strategy, tactics (how to maneuver forces on the battlefield), planning, and organization. They learn how each service supports the others, and how the services work together to defend our nation.

PME is divided into two courses of study that correspond to specific points in career development. Officers may be selected to attend full-time resident programs to complete PME. If not, they are strongly encouraged to complete the courses by correspondence. Resident PME courses are usually taught at service "war colleges." Each service has its own PME programs, but the levels of instruction and many subjects are similar. There are even opportunities for members of one service to attend full-time resident programs at the school of another service.

5) Leadership Training

Officers receive leadership training throughout their career. There are formal courses of leadership and management, and leadership is discussed in many occupational courses. Additionally, officers receive advice and on-the-job instruction in leadership from more senior officers.

Continuing Education

Continuing education is an important part of an officer's professional development. It allows officers to broaden their knowledge and earn advanced degrees in military science, technical subjects related to their occupations, management techniques, and subjects in which they are interested. Although having an advanced degree does not guarantee career advancement, it can be an important factor.

The services offer several programs for officer continuing education:

Service Colleges and Postgraduate Schools

Service-oriented institutions, like the Naval Postgraduate School and the Air Force Institute of Technology, offer advanced degree programs in many fields. Both correspondence courses and resident programs are available. There is intense competition for entrance into these programs, and selections are based on service need as well as officer preference.

Tuition Assistance

Up to 75 percent of tuition costs at state and private institutions may be reimbursed for officers enrolled in night school or correspondence courses. To participate, officers must meet the entrance requirements of the institution and meet service guidelines. In some cases, the service will select officers to attend graduate degree programs full-time and pay all costs plus their salary. Opportunities are limited, and selections are based on service need.

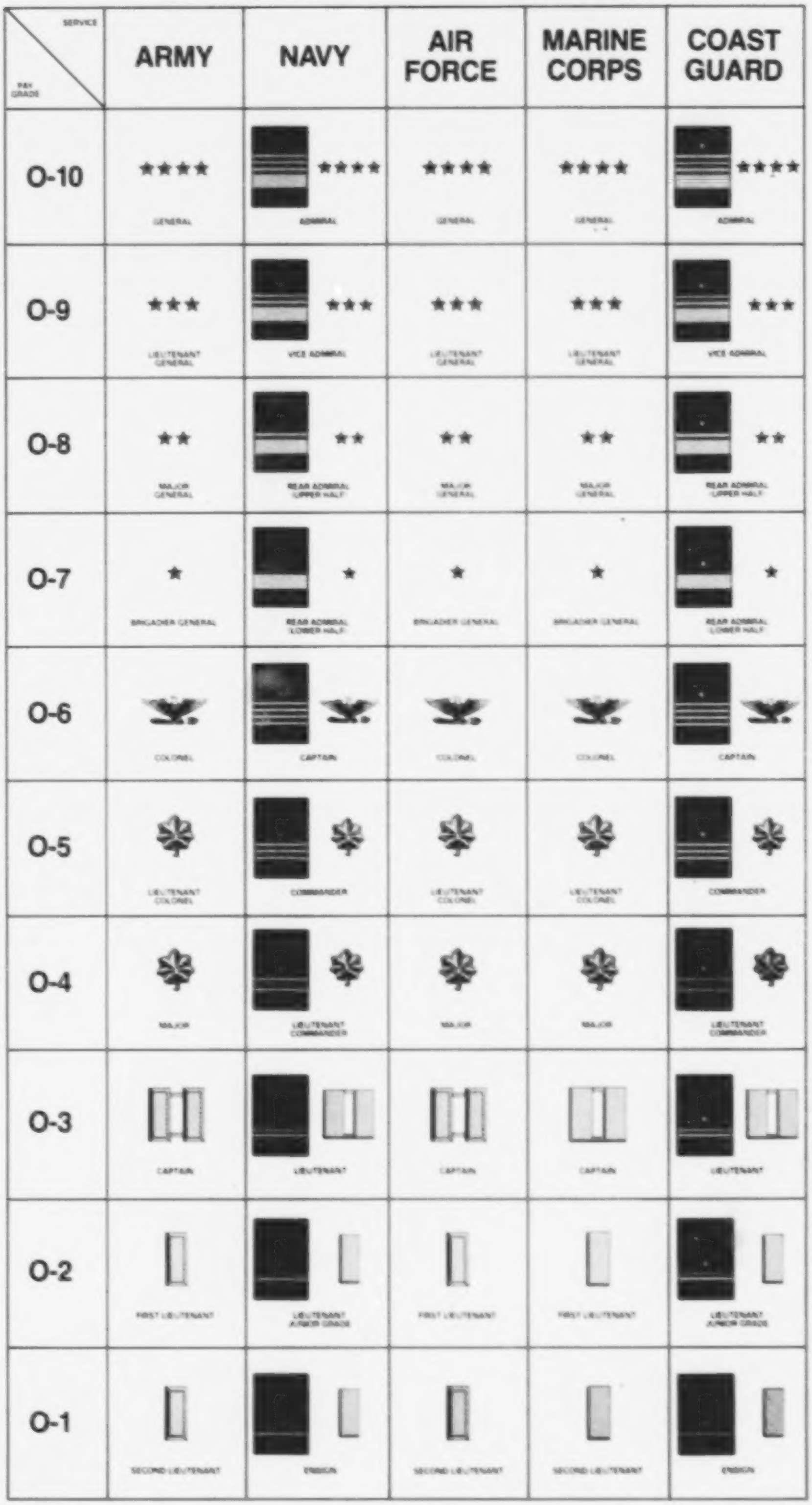
OFFICER PROMOTION

Officers can progress through 10 officer pay grades during their careers. Figure 7 contains information on the relationship between pay grade and rank and also illustrates the insignia for the ranks in each service.

Officers in the lower pay grades (O-1 and O-2) usually advance by the action of administrative boards. The boards screen the officers' performance records. They ensure that all necessary qualifications are being completed, that officers are recommended for promotion by their commanding officers, and that candidates have spent the required time in a pay grade. Usually, the competition for promotion at the junior level is not intense. However, early career performance becomes important as competition increases for promotion to more senior ranks.

Officers are continually evaluated by more senior officers. Individual performance is compared with the performance of all other officers in similar pay grades and occupations. At the O-3 level and above, a selection board thoroughly examines every aspect of each officer's career performance to select only the best qualified officers for promotion.

Figure 7
Officer Insignia of the United States Armed Forces



SERVICE / PAY GRADE	ARMY	NAVY	AIR FORCE	MARINE CORPS	COAST GUARD
O-10	GENERAL	ADMIRAL	GENERAL	GENERAL	ADMIRAL
O-9	LIEUTENANT GENERAL	VICE ADMIRAL	LIEUTENANT GENERAL	LIEUTENANT GENERAL	VICE ADMIRAL
O-8	MAJOR GENERAL	REAR ADMIRAL (UPPER HALF)	MAJOR GENERAL	MAJOR GENERAL	REAR ADMIRAL (UPPER HALF)
O-7	BRIGADIER GENERAL	REAR ADMIRAL (LOWER HALF)	BRIGADIER GENERAL	BRIGADIER GENERAL	REAR ADMIRAL (LOWER HALF)
O-6	COLONEL	CAPTAIN	COLONEL	COLONEL	CAPTAIN
O-5	LIEUTENANT COLONEL	COMMANDER	LIEUTENANT COLONEL	LIEUTENANT COLONEL	COMMANDER
O-4	MAJOR	LIEUTENANT COMMANDER	MAJOR	MAJOR	LIEUTENANT COMMANDER
O-3	CAPTAIN	LIEUTENANT	CAPTAIN	CAPTAIN	LIEUTENANT
O-2	FIRST LIEUTENANT	LIEUTENANT JUNIOR GRADE	FIRST LIEUTENANT	FIRST LIEUTENANT	LIEUTENANT JUNIOR GRADE
O-1	SECOND LIEUTENANT	ENSIGN	SECOND LIEUTENANT	SECOND LIEUTENANT	ENSIGN

Selection boards are made up of experienced senior officers. Each selection board evaluates performance from the time each officer entered service to the time the board meets. The members of the selection board evaluate each officer's record for promotion. Factors that qualify officers for promotion include:

- Career-long performance of job duties, leadership, and management
- Pursuit of, and success in, positions of increasing responsibility
- Successful completion of required qualifications and professional military education
- Appearance and behavior.

By selecting the best qualified officers for promotions, the services ensure they have the best possible leadership. Excellent performance reports are essential to career advancement. Although a series of excellent performance reports does not guarantee an individual's promotion, a less-than-excellent record severely limits chances for advancement. Since the number of officer positions is limited by Congress, the competition at senior levels is intense.

Figure 8 shows the average time an officer has been in the military (time-in-service) when he or she is promoted to each pay grade. For example, most officers will advance to O-2 in two years and to O-4 in 10 years. A very few outstanding officers may be selected for promotion earlier than indicated.

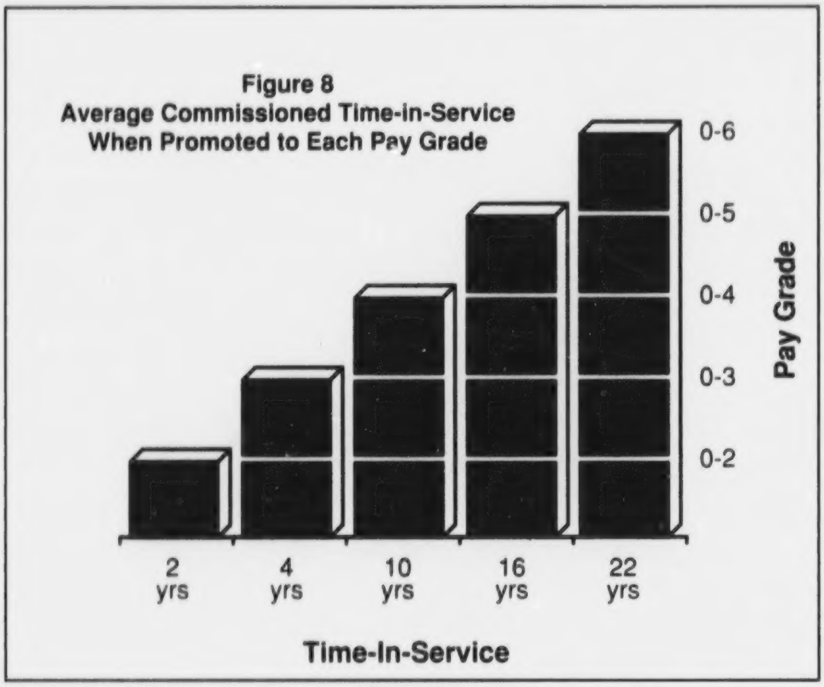


Figure 8
Average Commissioned Time-in-Service When Promoted to Each Pay Grade

DUTY ASSIGNMENT

The five services have similar systems for assigning personnel to jobs. Each system is designed to satisfy the present and future staffing needs of the particular service. For example, if the service needs a meteorologist or pilot at a remote location, officers in those occupations will be assigned there. However, at the same time, the services also attempt to meet the desires of individuals and provide the best opportunity for career development. The duty assignment process determines where officers work, how often they move, and the opportunities open to them.

Assignment Decisions

The services use mid- to senior-level officers who are familiar with a particular occupation to manage assignments for officers in that occupation. Assignment officers try to assign officers to different units to give them a broad range of experience. Both range and depth of experience are important to officer advancement. Although these officers cannot always meet each person's needs or desires, they try to make duty assignments that will enhance each officer's career.

Possible Location

All services require their officers to travel. Military officers are stationed in each of the 50 states and in countries all over the world. They are routinely transferred after one-, two-, three-, or four-year tours of duty. To many people, this is one of the attractive parts of service life and they join for the opportunity to travel, live in foreign countries, and see different parts of the United States. Nearly three-quarters of all service personnel are assigned to duty in the United States. Every service also has people stationed overseas; most of them are located in Europe, in countries such as Germany, Great Britain, and Italy. Many officers are also assigned to the Pacific Islands, including countries such as Japan. Typically, officers will have two overseas assignments during their career.

Length of Tours

The time that an officer spends at a particular duty assignment is called a tour. The length of a tour varies by service and geographic location. Typically, a tour lasts from three to four years, although there are many exceptions.

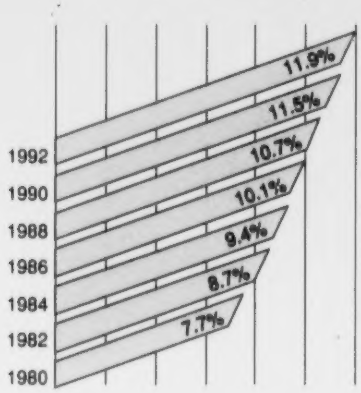


Figure 9
Women Officers
1980 - 1992

WOMEN OFFICERS

Military women are recognized today for the important contributions that they make to national defense. As shown in Figure 9, military women have increased to about 12 percent of active duty officers. The total number of women in the officer ranks reached over 33,700 in 1992.

According to federal laws and policies, women may not be assigned to duty that involves a high probability of exposure to direct combat. Through studies, the services have determined which occupations have the highest probability of exposure to direct combat. Examples of these occupations include infantry officer, artillery officer, and tank officer.

Despite federal laws and policies that restrict women from entering combat-related occupations, the scope of women's opportunities in the military has expanded. Women are currently eligible to enter about 90 percent of military job specialties. Examples of the many occupations in which women serve include airplane pilot, environmental health officer, physicist, and intelligence officer. The outlook for women officers in the military suggests that the future will provide even greater opportunities.

RESERVE FORCES

Seven forces make up the Reserves:

- Army Reserve
- Navy Reserve
- Air Force Reserve
- Marine Corps Reserve
- Coast Guard Reserve
- Army National Guard
- Air National Guard.

Reserve Forces Role

The Reserves have an important role in our national defense. Their primary mission is to stay prepared to respond to events that threaten our country's security. In a national emergency, the Reserves can be "called up" to serve temporarily on active duty to expand our regular armed forces.

In peacetime, the Reserves perform many duties to support the regular active-duty forces, such as air patrols, search and rescue missions, air defense watch, installation and repair of communications equipment, transport of troops and supplies, and provision of medical services.

In addition to serving the national defense, National Guard units serve their states and communities during natural disasters and civil emergencies. Guard members have been called upon to rescue flood and hurricane victims, fight forest fires, and assist local authorities during evacuations.

Becoming a Reserve Forces Officer

Currently, there are nearly 176,000 officers in the seven Reserve Forces. Each year, the Reserves need approximately 22,000 new officers. Although most Reserve Forces officers have prior experience as officers in the active-duty forces, young men and women without prior military experience may join the Reserves if they qualify. The basic qualification requirements are the same as for active-duty officers, shown in Table 5 on page 213.

There are several pathways to becoming a Reserve Forces officer, including ROTC and National Guard training. For more information, refer to the "Service Information on Officer Occupations" section beginning on page 227, or contact a military recruiter.

Service Obligation

To become a Reserve Forces officer, individuals without prior experience as active-duty officers must commit themselves to an eight-year service obligation and undergo an initial training program at a military base. This training lasts between six and 18 weeks, depending on the Reserve Force selected.

After initial training is successfully completed, Reserve Forces officers live and work as civilians in their own communities and train part-time with a nearby Reserve unit.

Reserve Unit Training

Reservists in organized units are required to attend training assemblies or drill regularly throughout the year. Reserve units are required to conduct a minimum of 48 training assemblies/drills a year. These assemblies are held in the evenings or on weekends or a combination of both. One weekend is the equivalent of four training drills.

Reservists must also spend from 12 to 17 days in full-time training each year. The annual training period is normally scheduled during the summer. Annual training may be conducted at a site away from the member's community, thus requiring Reservists to be away for this period.

Reserve Pay

A Reservist's pay is based on the same pay grade and length of service as military personnel on active duty. Members receive one day's pay for each drill attended. In addition, they receive one day's pay for each day of annual training.

PAY AND BENEFITS

Military officers in all five services are paid according to the same pay scale and receive the same basic benefits. Military pay and benefits are set by Congress, which normally grants a cost-of-living pay increase once each year. In addition to pay, the military provides many of life's necessities, such as food, clothing, and housing. The following sections describe officer pay, allowances, and benefits in more detail.

Officer Pay Grades

Officers can progress through 10 officer pay grades during their careers. Pay grade and length of service determine an officer's pay. Figure 7 on page 218 contains information on the relationship between pay grade and rank and also illustrates the insignia for the ranks in each service.

Most newly commissioned officers begin at pay grade O-1. Those who have certain professional qualifications and receive direct appointment may enter at a higher pay grade. After two years, officers usually move up to O-2. After an additional two years, the military generally promotes officers to O-3 if job performance is satisfactory and other requirements are met.

Basic Pay

The major part of an officer's paycheck is basic pay. Pay grade and total years of service determine an officer's basic pay. Table 6 contains information on annual basic pay as of 1992. Cost-of-living increases generally occur once a year. Using this table, you can find that a person who has been in the service for eight years, and advanced to pay grade O-3, receives a basic pay of $34,236 per year.

Incentives and Special Pay

The military offers incentive and special pay (in addition to basic pay) for certain types of duty. For example, incentives are paid for submarine and flight duty. Other types of hazardous duty with monthly incentives include parachute jumping, flight deck duty, and explosives demolition. In addition, the military gives special pay for sea duty, diving duty, duty in some foreign countries, and duty in areas subject to hostile fire. Special pay is also provided for officers in certain occupations, such as doctors, dentists, and veterinarians.

Table 6 – Basic Pay for Officers (Annual Figures)

	Years of Services								
Pay Grade	Under 2 yrs	2	3	4	6	8	10	···	26
O-10	•	•	•	•	•	•	•	···	$104,800
O-9	•	•	•	•	•	•	•	···	93,614
O-8	•	•	•	•	•	•	•	···	84,820
O-7	•	•	•	•	•	•	•	···	74,858
O-6	•	•	•	•	•	•	$44,572	···	65,768
O-5	•	•	•	•	•	•	39,380	···	•
O-4	•	•	•	•	•	$35,456	37,876	···	•
O-3	•	•	$28,508	$31,543	$33,052	34,236	36,090	···	•
O-2	$20,797	$22,712	27,292	28,206	28,793	•	•	···	•
O-1	18,058	18,796	22,712	•	•	•	•	···	•

* Military Personnel with this many years of service will probably not be in this pay grade. (Pay scale between 10 and 26 years not shown.)

Allowances

Many officers and their families live free of charge in military housing on the base where they are assigned. Those living off base receive a quarters (housing) allowance in addition to their basic pay. In 1992, the monthly housing allowance ranged from $302 to $848, depending on pay grade and if the officer had dependents. Each officer also received a subsistence (food) allowance of $134 per month. Because allowances are not taxed as income, they provide a significant tax savings in addition to their cash value.

When added together, housing and food allowances, along with their tax savings, are substantial additions to basic pay. Table 7 contains information on the total value of basic pay, allowances, and tax savings, called Regular Military Compensation. The table represents the amount of pay a civilian worker would have to earn to realize the same "take home" pay as a military officer. These figures provide a more realistic comparison between military and civilian salaries than the figures in Table 6.

Table 7 – 1992 Regular Military Compensation (Annual Figures)

Pay Grade	Years of Services								
	Under 2 yrs	**2**	**3**	**4**	**6**	**8**	**10**	···	**26**
O-10	•	•	•	•	•	•	•	···	$127,250
O-9	•	•	•	•	•	•	•	···	115,801
O-8	•	•	•	•	•	•	•	···	106,572
O-7	•	•	•	•	•	•	•	···	96,295
O-6	•	•	•	•	•	•	•	···	85,085
O-5	•	•	•	•	•	•	$55,862	···	•
O-4	•	•	•	•	•	$49,777	52,393	···	•
O-3	•	•	$40,557	$43,592	$45,100	46,285	48,208	···	•
O-2	$30,498	$32,592	37,598	38,517	39,104	•	•	···	•
O-1	26,291	27,030	31,289	•	•	•	•	···	•

Regular Military Compensation reflects basic pay, allowances, and the value of the tax advantage for allowances.

• Military Personnel with this many years of service will probably not be in this pay grade. (Pay scale between 10 and 26 years not shown.)

Employment Benefits

Military officers receive substantial benefits in addition to their pay and allowances. While they are in the service, officers' benefits include health care, vacation time, legal assistance, recreational programs, educational assistance, and commissary/exchange (military store) privileges. Families of officers also receive some of these benefits. Table 8 contains a summary of these employment benefits.

Retirement Benefits

The military offers one of the best retirement programs in the country. After 20 years of active duty, officers may retire and receive a monthly payment equal to 40 percent of their average basic pay for their last five years of active duty. Officers who retire with more than 20 years of active service receive higher pay. Other retirement benefits include medical care and commissary/exchange privileges.

Veterans' Benefits

Veterans of military service are entitled to certain veterans' benefits set by Congress and provided by the Veterans Administration. In most cases, these include guarantees for home loans, hospitalization, survivor benefits, educational benefits, disability benefits, and assistance in finding civilian employment.

Table 8 – Summary of Employment Benefits for Officers

Vacation	Leave time of 30 days per year.
Medical, Dental, and Eye Care	Full medical, hospitalization, dental, and eye care services for officers and most health care costs for family members.
Continuing Education	Voluntary educational programs for undergraduate and graduate degrees or for single courses, including tuition assistance for programs at colleges and universities.
Recreational Programs	Programs include athletics, entertainment, and hobbies: Softball, basketball, football, swimming, tennis, golf, weight training, and other sports Parties, dances, and entertainment Club facilities, snack bars, game rooms, movie theaters, and lounges Active hobby and craft clubs, book and music libraries.
Exchange and Commissary Privileges	Food, goods, and services are available at military stores, generally at lower costs than retail stores.
Legal Assistance	Many free legal services are available to assist with personal matters.

Service Information on Officer Occupations

Army

OVERVIEW

Today's Army is composed of a highly trained team of individuals. The individual soldier, the noncommissioned officer (NCO), and the officer make the Army's sophisticated technology work. They operate tanks, fly helicopters, and launch missiles. They build bridges, calibrate and operate computers, and apply state-of-the-art tools and methods to solve critical problems. Working together, these elements enable the Army to accomplish its mission to deter war and be prepared to fight and win should deterrence fail.

The Army is made up of nearly 750,000 bright, well-trained men and women, including more than 88,970 officers and 15,307 warrant officers. These men and women compose the best-trained, best-disciplined, and most self-assured Army in recent history. The Army needs about 7,000 new officers each year.

BECOMING AN OFFICER

You may become an officer in the U.S. Army through one of four commissioning programs: The United States Military Academy, The Army Reserve Officers' Training Corps (ROTC), the Officer Candidate School (OCS), or direct appointment. All require, as a minimum, that the applicant be a high school graduate, pass a medical and physical exam, and be at least 17 years old. In order to be competitive for these programs, an individual needs to be working toward or already have acquired a four-year college degree.

U.S. Military Academy

The United States Military Academy, located at West Point, New York, offers bachelor of science degrees with majors in both engineering and liberal arts. Graduates earn a commission as a second lieutenant in the U.S. Army.

Admission to the academy is very competitive. Appointments are generally made through nominations from United States Senators and Representatives. Applicants should begin their quest for entry into the academy no later than the middle of their junior year in high school.

Army Reserve Officers' Training Corps (ROTC)

Army ROTC is the primary source for college-trained officers for the Army. The ROTC program is currently offered at over 300 host institutions and through agreements at more than 1,000 colleges and universities.

Army ROTC is divided into two parts—the Basic Course and the Advanced Course. The Basic Course covers the freshman and sophomore years of college. Students may withdraw at any time, and no military obligation is incurred. Selected students may enroll in the Advanced Course during the final two years of college. Students in the Advanced Course receive uniforms, necessary textbooks, and a subsistence allowance of up to $1,000 each year. Cadets are scheduled for a six-week advanced camp during the summer between their junior and senior years of college.

Competitive scholarships are available for two, three, and four years. All ROTC scholarships pay for tuition up to $7,000 per year or 80 percent, whichever is greater; provide an allowance for textbooks, supplies, and equipment, lab fees, and other education expenses; and provide a $1,000 subsistence allowance each year.

Officer Candidate School (OCS)

Officer Candidate School (OCS) is a 14-week course to train enlisted personnel, warrant officers, and civilians with a college degree to be Army officers. Enlisted soldiers and warrant officers must have 60 hours of college before applying for OCS. Civilian applicants must have a bachelor's degree.

Direct Appointment

The Army offers direct appointment opportunities for specialists from selected legal, medical, ministerial, and technical career fields. Professional experience can even earn a higher entry grade for qualified applicants.

Warrant Officers

An Army warrant officer is an officer appointed by warrant of the Secretary of the Army, based on a sound level of technical and tactical competence. The warrant officer is a highly specialized expert and trainer who gains progressive levels of expertise and leadership by operating, maintaining, administering and managing the Army's equipment, support activities or technical systems for an entire career.

Becoming a warrant officer requires great skill in a specific occupational specialty. As an Army warrant officer, you must demonstrate leadership abilities and have the desire and dedication to perfect your technical proficiency through professional development, training, and education. Through schooling, experience, assignments and promotions, you are trained to perform effectively in the highest, most demanding positions within your career specialty. Your local Army recruiter can provide you with up-to-date information about how you can qualify to become a warrant officer.

OFFICER TRAINING

Newly commissioned officers attend an Officer Basic Course (OBC), which prepares them for their first assignment. OBC contains a mix of classroom education and physical training. Much of the time is devoted to practicing leadership skills in a work-like environment. During OBC, which lasts about four months, lieutenants also participate in a vigorous physical fitness program. OBC instruction is provided by the branch of the Army that utilizes an officer's specialty. For example, newly commissioned infantry officers attend OBC at the U.S. Army Infantry School at Fort Benning, Georgia.

Special skills that may be needed by new officers are developed at a functional training course. Pilots complete their flight training after OBC. Army infantry lieutenants may volunteer for Airborne (parachute) or Ranger training. Some infantry officers complete certification courses as Bradley fighting vehicle commanders if they are being assigned to units equipped with that vehicle.

Army officers are also provided advanced training and refresher instruction to meet the needs of the Army or their next assignment. These courses usually are not more than six months in length. For example, Army supply officers can take advanced courses in material management, air delivery of cargo, and food services management. Specialized courses are available in every career area.

At various points during a career as an Army officer, there are opportunities to participate in professional military education such as the Combined Arms Services Staff School or the Command and General Staff School. These programs prepare officers for the increasing responsibilities associated with career advancement to the more senior grades in the Army. They are primarily the study of how to be an officer and provide the command and staff knowledge required to be a professional officer.

ADVANCEMENT

Most new Army officers begin their careers as Second Lieutenants. A few officers receive a direct appointment to a higher grade. There are established points (time-in-service) at which time an officer is considered for promotion. Army officers are selected for advancement based on their being qualified to meet the requirements of the Army. The Army promotion process is designed to ensure advancement of the best officers, promote career development, and promote officers with the greatest demonstrated potential.

Promotion to the grade of First Lieutenant usually occurs at one and one-half years of service. After an additional two years of service, qualified officers are promoted to Captain. After being in the Army a total of nine to 11 years, an officer becomes eligible for promotion to Major. This and subsequent promotions are more competitive, with only the best qualified officers selected for promotion. While all officers compete with each other for promotion, the Army recognizes a need to retain the right number of officers with the skills to meet Army requirements. A selection board evaluates the potential of all eligible officers and recommends the best qualified in each career area for promotion. There are provisions for early promotions of outstanding performers (limited to less than 10 percent of promotions).

EDUCATION PROGRAMS

Advanced education is a goal for most Army officers. Some officers may be selected to pursue full-time studies toward a master's or doctorate degree through programs paid by the Army. Many officers pursue advanced education on their own time. Here are some of the programs offered by the Army for the advanced education of its officers:

Advanced Degree Program

The Army Educational Requirements System determines the Army's need for officers with advanced degrees. Selected officers are provided an opportunity to attend graduate school for up to three years in a discipline required by the Army. After completing their graduate studies, these officers are assigned to positions that utilize their education. These officers can also anticipate future assignments that capitalize on their specialized knowledge. Officers are considered for this program after completing six to eight years of active duty.

"Top Five Percent"

This program is for selected USMA or ROTC cadets in the top 5 percent of their graduating class. As a result of their academic standing and cadet performance, selected cadets are invited to pursue a master's degree at a civilian school. The program offers up to 18 months of advanced civilian education. Graduate studies are approved only in disciplines for which the Army has an established requirement.

Fully Funded Legal Education Program (FLEP)

The Judge Advocate General's Funded Legal Education Program allows up to 25 officers to be selected each year to attend a regular course of instruction leading to a Juris Doctor (J.D.) or Bachelor of Law (LL.B.) degree at an approved civilian law school. These programs are provided at government expense and usually last three academic years. Upon completion of schooling, the officer is required to accept an appointment in the Judge Advocate General's Corps for the period of active-duty obligation.

Training With Industry (TWI) Program

This program provides training in industrial procedures and practices not available through military or civilian schools. The TWI program provides officers with vital knowledge, experience and perspective in management and operational techniques. This experience is necessary to fill positions of significant responsibility in Army commands and activities that normally deal with civilian industry. Currently, these programs are concentrated in the areas of artificial intelligence, aviation logistics, communications-electronics, finance, marketing, ordnance, physical security, procurement, public affairs, research and development, systems automation, and transportation. These programs are normally one year long, with a predetermined follow-on assignment.

RESERVE OFFICERS

In thousands of cities and towns across America, men and women work full-time in their communities and serve their nation part-time in one of the Army's reserve components. There are more than 7,000 units of the Army Reserve and the Army National Guard. These units are trained and equipped to accomplish Army missions worldwide on very short notice. They are a vital part of the total Army team, often training alongside active-duty Army personnel at home and overseas.

There are about 11,000 officers currently serving in Army National Guard and Army Reserve units. They serve in all career fields found in the active component of the Army. Often they serve in a career field that is the same as their civilian profession. Many serve in military units that offer them an exciting and demanding change from their full-time job. Most reservists will agree that the skills and qualities that are necessary for success in civilian life are enhanced by their military training and experience.

FOR FURTHER INFORMATION

Students who wish to learn more about specific military occupations are encouraged to use this book to the fullest. In addition, many career information systems found in high schools and libraries have information about Army careers. The most up-to-date information about Army commissioning programs is available from an Army recruiter. Feel free to contact the one nearest you. There is no obligation.

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Navy

OVERVIEW

The Navy operates throughout the world to help preserve peace. Navy cruisers, destroyers, frigates, submarines, aircraft carriers, and support ships are ready to maintain the freedom of the seas. Navy sea and air power are available to assist in the defense of our allies or engage enemy forces in the event of war.

The United States Navy is a large and complex organization. It includes nearly 600 ships, 6,000 aircraft, and bases around the world. Over 550,000 officers and enlisted personnel make up today's Navy. Many of the nearly 70,000 officers serve as ship or submarine officers, pilots, flight officers, nuclear power instructors, and special warfare officers. Others perform specialized duties in intelligence, engineering, law, medicine, and scientific careers. Between 6,000 and 7,000 men and women join the Navy as officers every year.

BECOMING AN OFFICER

A Navy officer must be a mature person capable of assuming a wide variety of duties at sea, in the air, and ashore. Applicants must be physically fit, at least 19 years old, and United States citizens. They must have at least a bachelor's degree. The major fields of study required vary depending on the officer specialty.

There are several ways to become a Navy officer. Commissioning programs are available for students still in college and for college graduates. Specialists in certain professional and scientific fields may qualify for a direct commission. Programs leading to a commission as a Navy officer include the Naval Reserve Officers' Training Corps and the U.S. Naval Academy.

Naval Reserve Officers' Training Corps

The Naval Reserve Officers' Training Corps (NROTC) program offers tuition and other financial benefits worth up to $70,000 at more than 60 of the country's leading colleges and universities. Two-year and four-year subsidized scholarships are offered. Participants receive a monthly cash allowance.

Two-year and four-year nonsubsidized NROTC programs are also offered. These are referred to as college programs and provide for monthly cash allowances during the junior and senior years.

U.S. Naval Academy

The United States Naval Academy (USNA) provides a free four-year undergraduate education program. The USNA program leads to a bachelor's degree in a wide range of major subjects and a commission as a Navy or Marine Corps officer. Students are paid a monthly salary while attending the academy.

Students must be single with no children and must serve on active duty for at least five years after graduation, depending on follow-on training and designation. Admission to the Naval Academy is made through nominations from United States Senators, Representatives, the President and Vice President of the United States, and the Secretary of the Navy.

Nuclear Propulsion Officer Candidate Programs

The Nuclear Propulsion Officer Candidate (NUPOC) program is for college juniors and seniors pursuing a bachelor's degree in physics, chemistry, mathematics, or an engineering discipline. College graduates with a bachelor's or higher degree may also qualify for the NUPOC program. Cash bonuses are offered for joining and completing the Navy's NUPOC program.

The only Navy requirement is that the student maintain excellent grades in required subjects and earn a degree. While in the NUPOC program, the student can enjoy many of the same benefits received by regular Navy officers. Upon graduation from college, NUPOCs begin their naval officer training at Officer Candidate School (OCS) in Newport, Rhode Island.

Aviation Officer/Naval Flight Officer Programs

Aviation Officer Candidate (AOC) and Naval Flight Officer Candidate (NFOC) programs are for college seniors and graduates interested in becoming Navy pilots or flight officers. If qualified and accepted, they attend the Aviation Officer Candidate School in Pensacola, Florida.

Warrant Officers

The Warrant Officer Program is open to all enlisted Navy people with the rank of Chief Petty Officer or above and have completed at least 12 years of naval service. Warrant officers are senior to all enlisted Chief Petty Officers and junior to all Ensigns.

Limited Duty Officers

The Limited Duty Officer Program is open to warrant officers with more than two years of service as warrants and to enlisted people who are petty officers with at least eight years of naval service. If qualified, they earn a Navy officer commission because of their high quality and experience in a specialty, but are limited to duties of that specialty.

Direct Commission

Direct commission (appointment) may be attained by a professional person who is already established in his or her specialty field, but who is interested in the challenging and rewarding career and lifestyle of a Navy officer. The Navy has programs to help medical, dental, law, and theology students complete their professional training and earn commissions as Navy officers.

OFFICER TRAINING

Before receiving their first active-duty assignment, all new Navy officers go through a period of initial training. This training is designed to acquaint individuals with the Navy way of life, its rules, regulations, and responsibilities. The training also covers naval operations, organization, and administrative procedures. NROTC candidates and Naval Academy midshipmen receive this training as part of their college program. Other prospective officers are required to go to one of three schools—Officer Candidate School (OCS), Officer Indoctrination School (OIS), or Aviation Officer Candidate School (AOCS).

Each school consists of a full schedule of academic studies and rigorous physical training. OCS is a course for new surface warfare, nuclear submarine, engineering, supply, and diving and salvage officers. OIS is a course for officers who have received a direct commission in the field of medicine or law. AOCS is the training ground for prospective Navy pilots, naval flight officers, intelligence officers, and aviation maintenance duty officers.

Navy officers also go through specialized or technical training before their initial assignment. Initial advanced training after being commissioned an officer is usually at the Navy specialty school that pertains to the officer's major field of education or for which he or she qualified when entering the Navy. Here the new officers learn how to apply that specialty to naval operations.

For instance, cryptology officers go to the Naval Security Group orientation course; intelligence officers go to the Navy and Marine Corps Intelligence School; supply corps officers go to the Navy Supply School; civil engineer corps officers go to the Civil Engineer Corps School; and Navy chaplains go to the Chaplains' School. Pilots and naval flight officers receive their flight training and learn to operate the complex communications and weapons systems on Navy aircraft.

These schools may be several months to more than a year in length, depending on the complexity of the specialty and the advanced training needed. Other than the Navy aviation team, officers in the nuclear power program have the longest overall training period. After OCS, they go to Nuclear Power School in Orlando, Florida, for 24 weeks, then to a nuclear power training unit for 26 weeks, then to either the Submarine Officer Basic Course for 13 weeks or the Surface Warfare Officer School for 17 weeks before being assigned aboard a nuclear-powered vessel. The Navy's nuclear power training program is the broadest and most comprehensive anywhere.

Navy officers are also given short courses of special and refresher instruction to meet the needs of the service and their assignment. These courses usually are not more than six months in length. Specialized courses offered Navy officers are in communications, basic and advanced electronics, civil engineering, transportation management, naval justice, and petroleum products and supply.

Navy officers are also provided an opportunity to attend one of the service colleges. These are considered necessary for higher command leadership. A naval officer should possess a thorough knowledge of the principles and methods of naval strategy and tactics and of joint operations with other branches of the armed forces. To achieve these objectives, courses are given at the Armed Forces Staff College, the Inter-American Defense College, the National Defense University, the Naval War College, and Foreign Service Colleges.

ADVANCEMENT

Most college graduates begin their Navy officer career as an Ensign. After two years, they are eligible for promotion to Lieutenant Junior Grade. Another two-year period makes them eligible for promotion to Lieutenant. After being in the Navy a total of nine to 11 years, an officer becomes eligible for promotion to Lieutenant Commander. A Lieutenant Commander must have 15 to 17 years of service to be eligible to become a Commander. A Commander must have been in the Navy 21 to 23 years to be promoted to Captain.

Promotion to the ranks of Lieutenant Commander and above are very competitive, and only the best officers are selected for advancement. A selection board evaluates the past performance of each eligible officer and recommends the best qualified for promotions.

Each Navy officer is given a new assignment, or tour, as it is called, every few years. Every effort is made to match personal desires with the needs of the Navy. Assignments may be in the officer's chosen field or in a different field where there is a need.

EDUCATION PROGRAMS

Education and training are a continuous process throughout a Navy officer's career. As an officer's career develops, he or she may have the opportunity to take advantage of an advanced educational program. Presented below are some of the opportunities offered by the Navy in the professional development of its officers.

Postgraduate Education Program

The goal of the Navy's Postgraduate Education Program is to provide specialized education at the master's and doctorate level in technical and non-technical fields of study. The program is conducted mainly at the Naval Postgraduate School in Monterey, California. The program is supplemented by using civilian universities for many courses. It also makes use of appropriate courses provided by other agencies of the Department of Defense.

Correspondence and Extension Courses

Correspondence and extension courses are encouraged for all Navy officers. Most of the courses are provided by the Naval Correspondence Course Center. Others are offered by the Naval War College, the Industrial College of the Armed Forces, military medical and dental schools, the Defense Intelligence School, and the Naval Submarine School.

Officers may also enroll in courses given by other services and in graduate and undergraduate level education offered by colleges and universities.

THE NAVAL RESERVE

Navy officers who leave active duty for civilian careers can retain many of the benefits of a Navy career by joining the Naval Reserve Force.

The Naval Reserve Force is a team of highly trained people available in a national emergency to meet the expanded needs of the regular Navy. Most Reservists serve in a part-time status, consisting of one weekend a month and an annual two-week period of duty, called annual training (AT). These training periods can be taken on an individual basis or with a Reserve unit.

A Naval Reserve Force medical program works the same way for medical specialists who wish to serve their country and at the same time continue their civilian medical practice.

The Naval Reserve Force is a fast-growing military organization. Its officer force numbered more than 24,000 members in mid-1986, but is projected to rise to more than 25,000 by 1992.

FOR FURTHER INFORMATION

The occupational information in *Military Careers* can be useful in exploring career opportunities in the Navy. Many career information systems found in high schools and libraries have similar information about military careers. However, to obtain detailed information about the latest commissioning programs, contact your local officer programs recruiter. There is no obligation. The Navy's toll free number for recruiter information is 1-800-327-NAVY.

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Air Force

OVERVIEW

The United States Air Force is the primary aerospace arm of our nation's armed forces. The men and women of the Air Force fly, maintain, and support the world's most technically advanced aerospace forces, including long-range bombers, supersonic fighters, Airborne Warning and Control System (AWACS) aircraft, and many others. These forces are used whenever and wherever necessary to protect the interests of the United States and our allies. The Air Force is made up of almost 500,000 men and women—disciplined, dedicated, and professionally trained officers and airmen—from all walks of life. Nearly 100,000 officers pilot multimillion-dollar aircraft, launch satellites, gather sensitive intelligence data, manage maintenance and other logistical support, or do one of many tasks vital to the Air Force mission. The Air Force currently commissions about 4,000 men and women each year to fill openings in a wide variety of challenging careers.

BECOMING AN OFFICER

The Air Force commissions only United States citizens who possess a bachelor's degree from an accredited college. Depending on the career field an applicant selects, additional academic qualifications may be required (e.g., a graduate degree, specific courses). Applicants for a commission must also be physically fit and of high moral character. Typically, men and women may earn a commission through one of three precommissioning sources: The U.S. Air Force Academy, Air Force Reserve Officers' Training Corps (AFROTC), or Officer Training Group (OTG). Individuals in some professions may obtain a direct commission without attending one of the above commissioning programs.

U.S. Air Force Academy

Located at the foot of the Rocky Mountains near Colorado Springs, Colorado, the Air Force Academy annually accepts about 1,400 young men and women into its four-year program. Graduates earn a bachelor of science degree and an Air Force commission.

The program is intense, with a well-balanced curriculum that includes the physical and social sciences, humanities, and math. In addition, the academy provides cadets with a background in space operations through courses such as astrodynamics and aeroengineering.

Admission to the Air Force Academy is generally made through nominations from United States Senators or Representatives, but other avenues to receive an admission appointment are available.

Air Force Reserve Officers' Training Corps (AFROTC)

This program gives college students a unique opportunity to earn a commission while they complete their degree requirements. The AFROTC offers a four-, two- and one-year program (in selected fields) at more than 800 colleges and universities across the nation. You apply for the four-year AFROTC program by simply enrolling in the aerospace studies course at the time you register for your other freshman courses. You may apply for the two-year AFROTC program if you have at least two years of undergraduate work remaining. Each cadet receives $100 a month tax free during the final two academic years. See your AFROTC representative about details on the new one-year AFROTC Program.

Scholarships are available for all programs on a competitive basis. Scholarships pay for most tuition, laboratory and incidental fees, and textbooks. Scholarship cadets also receive $100 tax free each month during the school year. High school students interested in the four-year scholarship should apply late in their junior year or early in their senior year of high school. College freshman and sophomores can apply by contacting the professor of aerospace studies at their college or university.

Officer Training Group

The Officer Training Group (OTG) at Lackland Air Force Base near San Antonio, Texas, is a great opportunity for those who already have a bachelor's degree. Its rigorous 12-week program guides college graduates or degree airmen to commissions as Second Lieutenants. OTG cadets acquire the knowledge to perform as effective Air Force officers.

Direct Appointment

The Air Force directly commissions men and women in certain professions. Individuals are eligible for direct appointment if they are fully qualified in the medical, legal, or religious field. Individuals who believe they may be qualified for a direct commission should contact their nearest Air Force recruiter.

OFFICER TRAINING

Most new officers attend a technical training course immediately after coming on active duty. Technical training equips new officers with the specific skills required by their job specialty. Depending on the specialty, technical training lasts from a few weeks to over a year. (Some officers go directly to their first assignment without attending technical training.) Technical training centers are located at military installations throughout the United States. Upon completion of initial technical training, officers are assigned to an Air Force unit where they put their newly acquired skills to work.

At various points during a career as an Air Force officer, there is an opportunity to participate in professional military education—such as Squadron Officers School, Air Command and Staff College, and the Air War College. These programs prepare officers for the increasing responsibilities associated with career progression to the more senior grades in the Air Force. In addition, they provide the command and staff knowledge required to be a professional officer. Other educational opportunities are also available to Air Force officers.

ADVANCEMENT

Most newly commissioned officers enter the Air Force as Second Lieutenants. A few officers receive a direct appointment to a higher grade. There are established points when an officer is considered for promotion. Air Force promotions are based on the individual officer's performance. Promotion to the grade of First Lieutenant usually occurs after two years of service. After an additional two years of service, most officers are promoted to Captain.

Subsequent promotions are competitive, and only the best qualified officers are selected for promotion. All officers (except doctors, nurses, lawyers, and chaplains) compete with each other for promotions without regard to their specific career specialty. There are provisions for early promotion of outstanding performers.

Most young officers (Lieutenants) start out in small units. As they gain experience and progress in rank (Captain), they are assigned to larger units, overseeing the operation of several smaller units. More senior officers (Majors and Lieutenant Colonels) are usually assigned as commanders of squadrons and are responsible for accomplishing that squadron's mission, as well as for the welfare of the men and women under their command. Colonels typically command large units or head major staff functions. Generals command combat organizations and oversee thousands of personnel and hundreds of millions of dollars in aircraft, supplies, and equipment.

EDUCATION PROGRAMS

The Air Force will sponsor advanced education for qualified officers. Officers attending graduate school in their off-duty time can have the Air Force pay up to 75 percent of their tuition. The Air Force also sponsors officers' advanced education at the Air Force Institute of Technology (AFIT) or at one of the many civilian colleges throughout the country. The Air Force pays for all tuition, fees, books, and equipment and continues to provide full pay and benefits. AFIT provides scientific, technological, and other specialized education to satisfy Air Force requirements. Air Force-sponsored education leads to degrees in engineering, management, social sciences, and many other fields.

RESERVE FORCES

The reserve forces consist of two components, the Air National Guard and the Air Force Reserve. Their mission is to provide trained units and qualified personnel for active duty in the Air Force in time of war or national emergency; and at such other times as the national security requires.

The reserve forces are highly trained, combat ready, and available for immediate call up to serve on active duty. They train (drill) regularly and provide a significant contribution to the daily operations of the Air Force as a by-product of their training. Guard and Reserve air crews currently fly the Air Force's front line aircraft.

Air National Guard

The Air National Guard (ANG) provides 92 major flying units and several hundred mission support units, with at least one flying unit in every state. During peacetime, the Guard also has a state mission of disaster relief, maintaining peace and order and civilian defense. Guard units are under the control of the state governors through their Adjutants General. There are approximately 117,000 men and women in the ANG.

Criteria for appointment as an officer in the ANG are similar to those for active Air Force officers and are spelled out in Air Force regulations. However, selection and appointment to fill ANG unit vacancies are prerogatives of the states, with the Air Force granting federal recognition as reserve officers of the Air Force. Nonprior-service line officers selected for appointment in the ANG must attend six weeks of precommissioning training at the ANG Academy of Military Science, McGhee-Tyson AB, Knoxville, Tennessee, where they are prepared for their initial commissioned service in the ANG. Upon commissioning, many new ANG officers are scheduled to attend further Air Force training in their specialty. There are approximately 14,000 ANG officers, of which over 4,000 are pilots.

Air Force Reserve

The Air Force Reserve is a federal force. It provides 60 flying squadrons and more than 300 mission support units. The Air Force Reserve has both "equipped" units with their own aircraft and "associate" units that fly and maintain active force aircraft and augment their active force counterparts during wartime or times of crisis.

The Air Force Reserve consists of approximately 85,000 men and women who train regularly, either in the units or as Individual Mobilization Augmentees (IMAs). IMAs are individual Reservists who train with active-duty Air Force organizations and who will augment those organizations upon mobilization. There are approximately 11,000 IMAs.

Criteria for appointment as an officer in the Air Force Reserve are similar to those for active-duty Air Force officers and are discussed elsewhere in this guide. Nonprior-service personnel selected to be candidates for pilot or navigator training or to become engineers are sent to the Officer Training Group along with the active-force line officer candidates. Medical officers attend an active-force short course provided at Sheppard AFB, Texas. Each year, a small number of "deserving airmen" are selected to be commissioned from the enlisted ranks of the Air Force Reserve. They attend a two-week course at Lackland AFB, Texas, to learn officer skills.

There are approximately 17,000 Air Force Reserve officers (including IMAs). Approximately 3,000 are pilots and 700 are navigators. Over 21 percent of Reserve officers are women. The vast majority of the officer corps of the Air Force Reserve consists of prior-service officers who were commissioned through the Air Force Reserve Officers' Training Corps, the Air Force Academy, or the Officer Training Group and who served several years in the active Air Force before leaving extended active duty and joining the Air Force Reserve.

The focal point for recruiting officers in the Air Force Reserve and Air National Guard is the unit, since officers are basically recruited from the local area surrounding each unit. The Consolidated Base Personnel Offices, located at each flying unit, are aware of all officer vacancies in both the flying units and the mission support units they service.

FOR FURTHER INFORMATION

High school guidance counselors and Air Force Recruiters can give you advice and information on Air Force ROTC programs and the Air Force Academy. Local Air Force selection officers have the latest information on commissioning programs and career opportunities; contact them if you have any questions.

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Marine Corps

OVERVIEW

The United States Marine Corps was created on November 10, 1775, by a resolution of the Continental Congress. Since then, the Marine Corps has grown to be one of the most elite fighting forces in the world. The Marine Corps' mission is unique among the five services; Marines serve on U.S. Navy ships, protect naval bases, guard U.S. embassies abroad, and serve as an ever-ready strike force to quickly protect the interests of the U.S. and its allies anywhere in the world. To perform the many duties of the Marine Corps, approximately 181,000 officers and enlisted Marines in the Corps fly planes and helicopters; operate radar equipment; drive armored vehicles; gather intelligence; survey and map territory; maintain and repair computers, jeeps, radios, trucks, tanks, and aircraft; and perform hundreds of other challenging jobs. Each year, the Marine Corps accepts approximately 1,500 new officers into its ranks to maintain its approximately 17,000-person officer corps.

BECOMING AN OFFICER

The Marine Corps recruits young men and women of high moral standards who have or will have a four-year college degree, are physically fit, and have demonstrated potential for leadership. Applicants must be American citizens and pass the initial Marine Corps physical fitness test. Additionally, applicants must take either the SAT, ACT, or ASVAB aptitude tests. Minimum acceptable scores are: SAT – combined verbal and math scores of 1000; ACT – 45; and ASVAB – Electronics Repair composite – 120. The only age requirement is that a person must be at least 20 and no older than 28 at the time of commissioning. Applicants for law programs must score a minimum of 30 on a 50-point scale or 150 on a 180-point scale of the LSAT.

Marine Corps officers are selected from various sources, including the Naval Reserve Officers' Training Corps (NROTC) Program, the United States Naval Academy, the Platoon Leaders Class (PLC) Program, and the Officer Candidate Class (OCC) Program.

Naval Reserve Officers' Training Corps

The NROTC Scholarship Program offers tuition and other financial benefits worth as much as $70,000 at one of more than 62 of the country's leading colleges and universities. Four-year NROTC scholarships are available to high school graduates on a competitive selection process in which consideration is given to such factors as high school record, college board scores, extracurricular activities, and leadership qualities.

Two- and three-year NROTC scholarships are available to college freshmen, sophomores, and juniors meeting basic requirements. Recipients are selected in a competitive process similar to that for the four-year scholarship.

U.S. Naval Academy

Beginning in 1883, Marine Corps officers were commissioned from the U.S. Naval Academy, where graduating midshipmen earn a bachelor of science degree either in one of seven different engineering programs or in one of eleven disciplines offered apart from engineering programs. Today, nearly 17 percent of each graduating class receives a regular Marine Corps commission.

Platoon Leaders Class

The Platoon Leaders Class (PLC) Program is for those college freshmen, sophomores, and juniors who have made the decision to pursue a Marine Corps officer commission. Application to this program may be made upon successful completion of the first semester or quarter of the freshman year. Applicants must be enrolled in a four-year accredited college and are eligible to receive $100 per month in financial assistance after successful completion of their first summer of training.

PLC officer candidates attend summer training sessions at the Marine Corps Officer Candidates School in Quantico, Virginia. Freshmen and sophomores participate in two six-week sessions and juniors participate in one 10-week session.

Aviation guarantees in the PLC-Aviation Program are available to those who qualify. In this program, individuals receive real flight experience and instruction to familiarize themselves with flying before military flight training begins.

PLC-Law is a post-baccalaureate degree program for law school attendees. Active duty is postponed until a student obtains a law degree and passes the bar examination.

Officer Candidate Class

The Officer Candidate Class (OCC) Program is precommission training for college seniors and graduates who desire to be Marine Corps officers. Upon graduation from college, candidates attend one 10-week officer training course and receive a reserve commission upon successful completion of training.

Women Officer Candidate Program

The Women Officer Candidate (WOC) Program is open to women in their junior and senior years of college or who have graduated from a four-year accredited institution. Training consists of a 10-week summer course in consolidated officer candidate companies. Women candidates participate in many of the same rigorous screening programs as their male counterparts, and when they successfully complete training, they receive a reserve commission as well.

In addition to the programs described above, the Marine Corps has programs for qualified enlisted personnel to earn commissions as officers.

OFFICER TRAINING

The Marine Corps has developed career patterns to prepare its officers to assume progressively higher command and staff responsibilities. These career patterns are designed to provide individual training and education, followed by operational assignments. They allow officers to learn their professions and progress to sequentially more demanding assignments.

Officer training can generally be divided into three types. First, the Marine Corps maintains a system of professional military education that is progressive in nature. This education prepares offices for the increasing responsibilities associated with career progression to more senior grades in the Marine Corps. It is primarily the study of how to be an officer and the command and staff knowledge required of a professional. Examples of this type of training are the 23-week Basic Officers Course, which all newly commissioned officers attend, and the 43-week Command and Staff College for midgrade officers.

The second type of training encompasses the many specific skill-producing courses that are conducted to enable the officer to perform in a specialized area immediately upon assignment. Most Marine Corps officers attend one of these courses sponsored by the Corps, but they may also attend others conducted by the Navy or another service. An example of this type of initial training is pilot training conducted by the Navy. An example of follow-on skill progression training is the Weapons and Tactics Instructor Course designed for highly qualified aviation and command and control officers.

The third type of training provided to selected officers is either in-house or civilian advanced academic education. This type of training is designed to meet the Marine Corps' need for officers trained in specific technical, scientific, engineering, or managerial fields. Examples of this type of training are the U.S. Naval Test Pilot School and the U.S. Army Management of Defense Acquisition Contracts Course.

Every Marine Corps officer's training begins with the physically and mentally demanding Basic Officers Course and progresses to individual training specifically designed for his or her military occupational specialty (MOS). This unique training of the Marine Corps air-ground team provides all Marine Corps officers with a common background that is independent of their MOS.

ADVANCEMENT

Marine Corps officers are selected for advancement based on their being best and fully qualified to meet the needs of the Marine Corps. Each individual's qualifications and performance of duty must clearly demonstrate that he or she would be capable of performing the duties normally associated with the next higher permanent grade. Every aspect of an officer's performance is carefully evaluated during the selection process to ensure that those selected for promotion are truly the best qualified.

The Marine Corps has an established career counseling system to provide officers with proper career guidance and counsel. Broad guidelines help to channel all officers to a rewarding, successful career.

After initial qualification in an MOS, officers are offered continued professional education, various duty assignments, and further MOS training. Junior officers can expect to perform not only as leaders, but as technicians and managers. Commonly, junior officers are put in charge of units consisting of anywhere from three or four to over 100 Marines.

As junior officers become more proficient in their fields, opportunities arise for more challenging assignments and increased responsibility. Performance in these challenging situations directly relates to the continuance of a Marine Corps career. Although promotion boards review many factors, performance is the key to advancement.

EDUCATION PROGRAMS

The Marine Corps offers career education at every level in the officer ranks. Not only is formal schooling provided to enhance the professional development of officers, but the Marine Corps has an extensive correspondence course program available to all officers.

Especially inviting are the various graduate education programs made available to qualified officers: the Special Education Program, the Advanced Degree Program, the Excess Leave Program-Law, and the Funded Law Education Program.

Special Education Program

The Special Education Program (SEP) is a fully funded program designed to build up the Marine Corps' pool of officers with specialties in both technical and nontechnical disciplines. Officers accepted into and completing the program earn master's degrees in designated disciplines by attending the Naval Postgraduate School, the Air Force Institute of Technology, or approved civilian schools.

Advanced Degree Program

Under the Advanced Degree Program (ADP), expenses for the cost of a master's degree are partially funded. Officers are selected to study in a particular technical or nontechnical discipline and may attend the accredited school of their choice. While in this and the SEP program, officers continue to receive all pay and allowances.

A sample of the types of disciplines officers may study while in either the ADP or the SEP includes space systems operations, defense systems analysis, management, public relations, computer science, electronic engineering, and telecommunications management.

Excess Leave Program-Law

The Excess Leave Program-Law (ELP-L) provides qualified Marine Corps officers the opportunity to take time off from active duty to attend an accredited law school at their own expense. While participating in the ELP-L, officers receive no pay or allowances.

Funded Law Education Program

Under the Funded Law Education Program (FLEP), Marine Corps officers attend an accredited law school of their choice, with the Marine Corps paying their tuition and expenses. Full pay and allowances are provided to those officers in the FLEP.

RESERVE OFFICERS

The Marine Corps Reserve plays a vital role in the augmentation of the regular force. Hard work and dedication are keys to maintaining a combat-ready force capable of responding, at any time, to the call to active duty. Reserve officers have an especially challenging role in maintaining this ready force.

Currently, 8,900 Reserve officers serve on active duty, and 7,500 Reserve officers are assigned to Selected Marine Corps Reserve (SMCR) units or the Individual Ready Reserve (IRR).

Reserve officers serve in the same types of duties and job assignments as their regular counterparts. The main difference is that they serve part-time, one weekend each month and two weeks of continuous duty each year. Regular officers serve full-time, all year round.

FOR FURTHER INFORMATION

The above information is only a broad overview of the exciting challenges available to Marine Corps officers. Young men and women desiring more information about Marine Corps officer opportunities should talk to a local Marine Corps officer selection officer.

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Coast Guard

OVERVIEW

The United States Coast Guard regularly performs many functions vital to maritime safety. The Coast Guard's most visible job is saving lives and property in and around American waters. The Coast Guard also enforces customs and fishing laws, protects marine wildlife, fights pollution on our lakes and along the coastline, and conducts the International Ice Patrol. The Coast Guard is also responsible for monitoring traffic in major harbors, keeping shipping lanes open on ice-bound lakes, and maintaining lighthouses and other navigation aides.

The Coast Guard is a part of the U.S. Department of Transportation. In time of war it may be placed under the command of the Navy Department. A vital part of the Armed Services, the Coast Guard has participated in every major American military campaign. The Coast Guard is the smallest of the armed services, with about 5,000 officers and 32,000 enlisted personnel on active duty. Coast Guard officers perform in many different occupations to support the mission of the Coast Guard. Each year, the Coast Guard has openings for about 400 new officers in a wide range of challenging careers.

BECOMING AN OFFICER

There are three programs leading to a commission as an officer in the U.S. Coast Guard—the Coast Guard Academy, Officer Candidate School, and direct commissioning. Applicants for all programs must be physically fit, United States citizens, and of high moral character.

The U.S. Coast Guard Academy

The U.S. Coast Guard Academy, located in New London, Connecticut, accepts about 270 young men and women into its program each year. The four-year academic program leads to a bachelor of science degree in a variety of majors. Approximately 75 percent of the academy graduates earn degrees in technical areas such as engineering, sciences, and mathematics.

Each major provides a sound undergraduate education in a field of interest to the Coast Guard and prepares the cadet to assume initial duty as a junior officer. Upon graduation, the cadet is commissioned as an ensign in the Coast Guard.

Appointment as a cadet is based solely on an annual nationwide competition. It is not necessary to obtain a nomination from a Senator or Representative. The competition includes either the College Board Scholastic Aptitude Test (SAT) or the American College Testing Assessment (ACT), your high school rank in class, and your leadership qualities. Interested students should apply during the fall of their senior year in high school.

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Officer Candidate School

The Officer Candidate School (OCS) is precommissioning training for college graduates who want to become Coast Guard officers. Candidates attend a 17-week officer training course at Yorktown, Virginia. The physical and academic curriculum is demanding. In addition to physical training, OCS candidates study navigation, ship's operations, seamanship, Coast Guard orientation, and leadership. After completing OCS, candidates are commissioned as Ensigns in the Coast Guard Reserve.

Direct Commissions

Graduates from a law school accredited by the American Bar Association are eligible to receive commissions as Lieutenants in the Coast Guard Reserve. The applicant must be admitted to the bar of a state or federal court within one year of receiving a commission. Qualified graduates of state and federal maritime academies may also be eligible for a commission as an Ensign or Lieutenant Junior Grade in the Coast Guard Reserve. Additionally, direct commissions are available for ROTC/NROTC/AFROTC students at selected colleges and universities. Prior-trained military officers may also compete for this program and are awarded commissions based on experience. Engineers are highly sought and may be directly commissioned up to the rank of Lieutenant. Qualified military pilots may compete for direct commissions as aviators in the rank of Ensign or Lieutenant Junior Grade in the Coast Guard Reserve.

TRAINING

Newly commissioned officers are offered a wide variety of mission opportunities for their first assignment. This duty will be in one of the Coast Guard's primary missions, such as search and rescue, marine law enforcement, drug interdiction, or aids to navigation. All officers are encouraged to apply for postgraduate education or specialized training. The Coast Guard provides training in a range of career areas. Coast Guard pilot training is available to selected graduates of the Coast Guard Academy or Officer Candidate School. Pilot trainees attend 14 months of basic and advanced flight training at naval air stations in Pensacola, Florida, Corpus Christi, Texas, or Mather AFB in Sacramento, California. Many other courses are provided to instruct officers in specific skills needed for a particular assignment. In addition, there is an opportunity to participate in professional military education such as the Armed Forces Staff College, the Industrial College of the Armed Forces, or one of the colleges run by another branch of the service.

THE MINORITY OFFICER RECRUITING EFFORT (MORE)

The Coast Guard offers up to two-year scholarships to eligible students enrolled full time in four-year college programs. Technical majors are preferred, but not essential for participation. Selections are based on nationwide competition with selection announcement in early spring. College sophomores and juniors may compete. Upon successful completion of the MORE program, acceptance into OCS is guaranteed.

EDUCATION PROGRAMS

The Coast Guard believes strongly in the continued education of its members. The Coast Guard offers several education assistance programs, including:

Tuition Assistance Program

The Coast Guard sponsors a tuition assistance program for off-duty education within the limits of available funds. This program allows Coast Guard officers to enroll in off-duty courses at accredited colleges and universities. The tuition is paid by the Coast Guard for all courses not in excess of six credits per semester (or quarter) or for any course not extending beyond one semester or a maximum of 17 weeks, whichever is longer.

Physician's Assistant Program

The Physician's Assistant Program is a two-year, full-time course of study at the Duke University Medical Center, Durham, North Carolina. The program includes nine months of elementary scientific principles, terminology, and basic medical science and 15 months of clinical training. Upon successful completion, Coast Guard graduates receive their certificates as physician's assistants and direct commissions as Chief Warrant Officers (Physician's Assistants). In some cases when the student has had additional college courses, completion of the program may result in a bachelor's degree in Health Science.

Postgraduate Education Program

The Coast Guard offers qualified officers an opportunity to obtain advanced education on a full-time basis at Coast Guard expense. Each year, approximately 125 officers are selected for this program. They attend various colleges and universities in over 30 major curriculum areas. Entry into this program is competitive, and only the best qualified officers are selected.

FOR FURTHER INFORMATION

Although the preceding section gives a general overview of the Coast Guard and its programs, it by no means covers the wide range of opportunities available in the Coast Guard. Use *Military Careers* to begin exploring career possibilities in the Coast Guard. Your local Coast Guard recruiter would be pleased to supply you with current, more detailed Coast Guard career information. There is no obligation.

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Officer Occupational Descriptions

Executive, Administrative, and Managerial Occupations

Accountants and Auditors
Attaches
Communications Managers
Computer Systems Managers
Emergency Management Officers
Financial Managers
Food Service Managers
Health Services Administrators
Management Analysts
Personnel Managers
Postal Directors
Purchasing and Contracting Managers
Recruiting Managers
Store Managers
Supply and Warehousing Managers
Teachers and Instructors
Training and Education Directors
Transportation Maintenance Managers
Transportation Managers

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ACCOUNTANTS AND AUDITORS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military spends billions of dollars each year on personnel, equipment, and supplies. Complete and accurate records of these expenditures are needed for planning and budgeting. Accountants and auditors prepare and examine financial records and reports. They also advise commanders on financial and accounting matters.

What They Do

Accountants and auditors in the military perform some or all of the following duties:

- Develop ways to track financial transactions
- Direct and help in the collection and analysis of financial data
- Examine records of financial transactions to make sure they are recorded correctly
- Review audit reports and expenditure records
- Recommend ways to improve accounting and auditing operations
- Develop accounting and auditing training programs
- Direct the activities of accounting and auditing staff

Special Requirements

A 4-year college degree is normally required to enter this occupation. Recognition as a Certified Public Accountant (CPA) is desired.

Helpful Attributes

Helpful fields of study include accounting, finance and business, or public administration. Helpful attributes include:

- Preference for working with numbers and statistics
- Interest in work requiring accuracy and attention to detail

Work Environment

Accountants and auditors work in large accounting and finance offices.

Training Provided

Job training consists of 12 to 16 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Military accounting
- Financial management
- Duties of accounting and finance officers
- Personnel management and payroll procedures

Civilian Counterparts

Civilian accountants and auditors work for accounting firms, government agencies, and all types of business organizations. They perform duties similar to those performed by military accountants and auditors. They usually specialize in certain areas of accounting, such as budgets, internal auditing, or cost accounting. Some civilian employers require that accountants hold a CPA.

Opportunities

The services have about 1,100 accountants and auditors. On average, they need 40 new accountants each year. After job training, accountants and auditors are assigned to accounting and finance offices. Initially, they perform work in accounting, auditing, or financial management operations. With experience, they advance to senior management or command positions.

ATTACHÉS

Army
Navy
Air Force
Marine Corps

Information about the military capabilities of foreign countries is vital to our national defense. Our leaders need to know the strengths and weaknesses of both friendly and unfriendly countries. Attachés collect, analyze, and report information about foreign countries to be used for military planning.

What They Do

Attachés in the military perform some or all of the following duties:

- Collect and report information about the military forces of foreign countries
- Hold meetings with foreign military and government officials
- Analyze political, social, and economic matters in foreign countries
- Project foreign political trends
- Advise commanders about situations in foreign countries

Special Requirements

A 4-year college degree is normally required to enter this occupation. Some specialties require an advanced degree. Knowledge of the people and language of one or more foreign countries may be required.

Helpful Attributes

Helpful fields of study include political science, history, and international affairs. Helpful attributes include:

- Ability to express ideas clearly and concisely
- Interest in collecting and analyzing data
- Interest in living and working in a foreign country
- Interest in working closely with people

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Work Environment

Attachés work mainly in offices of U.S. embassies and missions located overseas.

Training Provided

Job training is provided in some specialties. Training length varies by entry requirements and specialty area. Course content typically includes:

- Political and cultural awareness
- Development of foreign area expertise
- Organization and functions of diplomatic missions

Further training occurs on the job.

Civilian Counterparts

Civilians who perform work similar to the work of attachés are employed mainly by government agencies, such as the Department of State. Called foreign service officers, they work in U.S. embassies and missions overseas. Other civilian counterparts include political scientists, university instructors, and advisors to corporations doing business overseas.

Opportunities

The services have about 450 attachés. On average, they need 2 new attachés each year. Normally, attachés are selected from among officers who have several years of military experience. They are selected from a variety of military career fields. Officers selected to be attachés usually return to their main career field after several years of duty as an attaché.

COMMUNICATIONS MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Instant worldwide communication among air, sea, and land forces is vital to military operations. The services operate some of the largest and most complex communication networks in the world. Communications managers plan and direct the operation of military communication systems. They also manage personnel in communications centers and relay stations.

What They Do

Communications managers in the military perform some or all of the following duties:

- Develop rules or procedures for sending and receiving communications
- Direct personnel who operate computer systems and electronic telecommunications and satellite communications equipment
- Develop ways to track and ensure security of communications
- Direct personnel who maintain and repair communications equipment
- Develop budgets for communication centers

Special Requirements

A 4-year college degree, preferably in engineering, mathematics, computer science, or related fields, is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in working with computers, radios, and electronic equipment
- Interest in technical work

Work Environment

Communications managers usually work in communications centers on land or aboard ships.

Training Provided

Job training consists of 12 to 32 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Communication theory and security
- Communications-electronics management
- Satellite communications, including tactical ground terminals
- Electronic principles, technologies, and systems
- Tactical combat communications systems

Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian communications managers work for private firms involved with telephone and telegraph communications, radio and TV broadcasting, and satellite communications. They perform duties similar to those performed by military communications managers. Depending on their specialty, they may also be called station managers, operations managers, and communications superintendents.

Opportunities

The services have about 7,800 communications managers. On average, they need 500 new communications managers each year. After job training, communications managers are assigned to manage or assist in managing a communications center. With experience, they may advance to senior management or command positions.

COMPUTER SYSTEMS MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military uses computers in almost every aspect of its operations. Military computers are used to process payroll and personnel information, control the targeting and firing of weapons systems, account for money, and make it easier to communicate around the world. Computer systems managers direct the operations of computer centers.

What They Do

Computer systems managers in the military perform some or all of the following duties:

- Prepare data processing plans and budgets
- Develop policies and procedures for computer facility operations
- Develop and monitor contracts for data processing equipment and services
- Direct teams of programmers, systems analysts, systems engineers, and computer operators
- Plan and direct training for computer facility personnel

Special Requirements

A 4-year college degree in computer science, mathematics, business administration, industrial management, or engineering management is required to enter this occupation. Some specialties require a master's degree.

Helpful Attributes

Helpful attributes include:

- Interest in working with computers
- Interest in planning and directing the work of others

Work Environment

Computer systems managers in the military work in offices or computer centers.

Training Provided

Job training consists of 10 to 13 weeks of classroom instruction, including management exercises. Training length varies depending on specialty. Course content typically includes:

- Administration and management of data processing centers
- Fiscal and contract management
- Computer systems project management
- Computer systems personnel training and development
- Assessment of computer equipment needs

Civilian Counterparts

Civilian computer systems managers work for a wide variety of employers, such as banks, hospitals, manufacturers, financial firms, insurance companies, and government agencies. They perform duties similar to those performed by military computer systems managers. They may also be called data processing managers, ADP managers, EDP managers, information systems directors, and management information systems directors.

Opportunities

The services have about 1,700 computer systems managers. On average, they need 60 new computer systems managers each year. After job training, computer systems managers are assigned to manage small computer installations or small units in large installations. With experience, they may become managers of large installations or advance to senior management and command positions in the computer systems field.

EMERGENCY MANAGEMENT OFFICERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military must be prepared for all types of emergencies, from natural disasters, such as floods, earthquakes and hurricanes, to enemy attacks. Emergency management officers prepare warning, control, and evacuation plans. They also coordinate emergency response teams during natural disasters.

What They Do

Emergency management officers in the military perform some or all of the following duties:

- Organize emergency teams for quick responses to disaster situations
- Research ways to respond to possible disaster situations
- Conduct training programs for specialized disaster response teams
- Develop joint disaster response plans with local, state, and federal agencies
- Obtain supplies, equipment, and protection equipment
- Develop warning systems and safe shelters
- Direct disaster control centers

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include physical and environmental sciences, engineering, law enforcement, and business or public administration. Helpful attributes include:

- Interest in developing detailed plans
- Ability to remain calm in stressful situations
- Ability to express ideas clearly and concisely

Work Environment

Emergency management officers usually work in offices while developing disaster response plans. They work outdoors while inspecting shelters or directing emergency response teams.

Training Provided

Job training consists of 2 to 9 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Disaster planning
- Procedures for nuclear, biological, and chemical decontamination
- Effects of radiation
- Procedures for nuclear accident teams

Civilian Counterparts

Civilian emergency management officers work for federal, state, and local governments, including law enforcement and civil defense agencies. They perform duties similar to those performed by military emergency management officers.

Opportunities

The services have about 600 emergency management officers. On average, they need 30 new emergency management officers each year. After job training, emergency management officers are assigned to command centers or planning sections, where they develop emergency plans and training programs. In time, they may advance to senior management positions.

FINANCIAL MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Each year, the services issue millions of paychecks and buy great quantities of equipment and supplies. Only through careful management can military funds be put to their best use. Financial managers direct the financial affairs of the military. They study current spending trends and set major economic objectives.

What They Do

Financial managers in the military perform some or all of the following duties:

- Set policies for the use of military funds
- Direct the preparation of budgets and financial forecasts
- Compare actual spending to what was planned
- Study ways to improve the use of personnel, materials, and funds
- Revise budgets to reflect unexpected changes in spending needed for salaries and equipment
- Advise management personnel on accounting, budgeting, and fiscal matters
- Direct budget and accounting staff

Special Requirements

A 4-year college degree in accounting, finance, or a related field is required to enter this occupation. Some specialties require a master's degree in business administration or recognition as a Certified Public Accountant (CPA).

Helpful Attributes

Helpful attributes include:

- Preference for working with numbers and statistics
- Interest in work requiring accuracy and attention to detail
- Interest in planning and directing the work of others

Work Environment

Financial managers work in offices.

Training Provided

Job training consists of 2 to 12 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Budgetary review and analysis
- Financial management techniques
- Budget preparation and accounting operations
- Statistical analysis and fiscal planning

Civilian Counterparts

Civilian financial managers work for businesses, universities, hospitals, or government agencies. They perform duties similar to those performed by military financial managers. In large business firms, they may be called executive controllers or company treasurers.

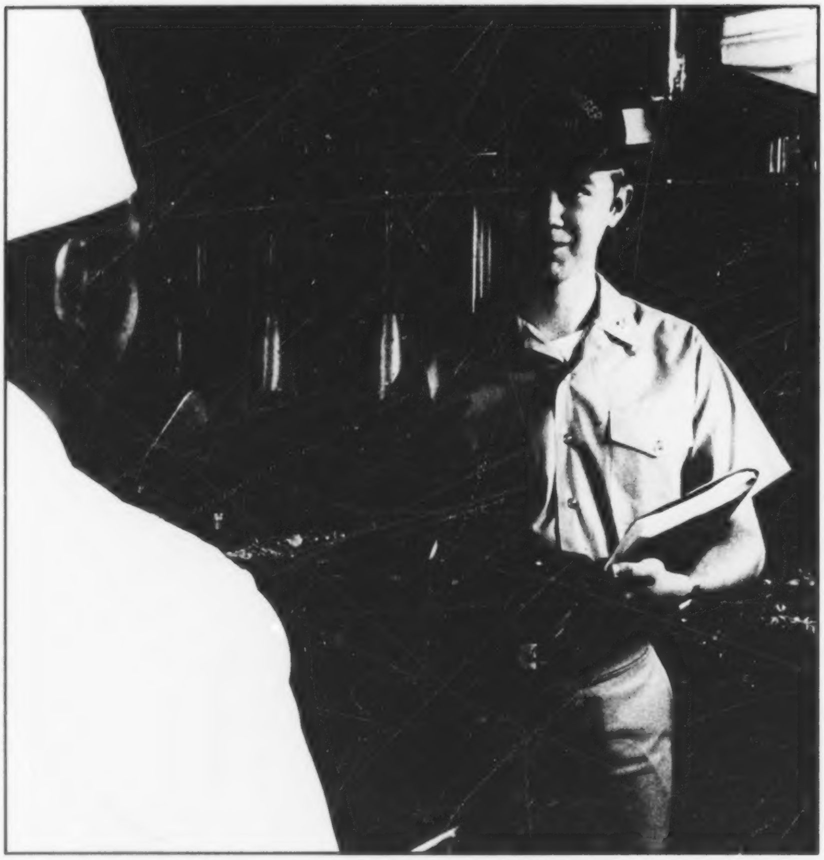
Opportunities

The services have about 2,400 financial managers. On average, they need 50 new financial managers each year. After job training, financial managers are normally assigned to fiscal or budget management positions. They may also be assigned as financial advisors to base or unit commanders. After demonstrating leadership abilities, they may advance to senior management and command positions.

FOOD SERVICE MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military serves food to hundreds of thousands of service members each day. Meals must be carefully planned and prepared to ensure good nutrition and variety. Food service managers direct the facilities that prepare and serve food.



What They Do

Food service managers in the military perform some or all of the following duties:

- Manage the cooking and serving of food at mess halls
- Direct the operation of officers' dining halls
- Determine staff and equipment needed for dining halls, kitchens, and meat-cutting plants
- Set standards for food storage and preparation
- Estimate food budgets
- Maintain nutritional and sanitary standards at food service facilities

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include food service management, nutrition, and business administration. Helpful attributes include:

- Interest in nutrition and food preparation
- Interest in planning and directing the work of others

Work Environment

Food service managers usually work in food service facilities. They may manage facilities in field camps or aboard ships.

Training Provided

Job training consists of 12 to 16 weeks of classroom instruction. Course content typically includes:

- Food service operations and management
- Resource management
- Nutritional meal planning
- Hotel management

Civilian Counterparts

Civilian food service managers work for hotels, restaurants, and cafeterias. They perform duties similar to those performed by military food service managers.

Opportunities

The services have about 2,500 food service managers. On average, they need 600 new food service managers each year. After job training, food service managers may work independently or under the supervision of other officers. With experience, they may manage one or more large facilities. In time, they may advance to senior management positions.

HEALTH SERVICES ADMINISTRATORS

Army
Navy
Air Force
Coast Guard

In hospitals and clinics, all of the departments—emergency, X-ray, nursing, maintenance, administration, and food service—must work together to provide quality health care. Health services administrators manage hospitals, clinics, and other health care facilities. They also manage individual departments or specific health care programs within a hospital.

What They Do

Health services administrators in the military perform some or all of the following duties:

- Develop and manage budgets for health care facilities or programs
- Meet with hospital department heads to plan services and keep the health care facility running smoothly
- Direct personnel activities, such as hiring, employee evaluation, staff development, and recordkeeping
- Plan for delivering health services during emergencies and test these plans during exercises
- Direct the day-to-day operations of the nursing department
- Direct the operations of support departments, such as maintenance, food services, or administration

Special Requirements

A 4-year college degree in health care, public health, business, nursing administration, or a related field is required to enter most of the specialties in this occupation. Some specialties require further education or prior experience in the health services field.

Helpful Attributes

Helpful attributes include:

- Interest in planning and directing the work of others
- Interest in working closely with people
- Ability to express ideas clearly and concisely
- Interest in health care

Work Environment

Health services administrators work in hospitals, clinics, and other health care facilities. Most work at facilities on land, but some work aboard hospital ships and ships with large sick bays.

Training Provided

Job training is provided for some specialties in this occupation. This training consists of 10 to 12 weeks of classroom instruction and practical exercises. Course content typically includes:

- Planning and directing health services
- Patient unit management
- Nursing service administration

Civilian Counterparts

Civilian health services administrators usually work for hospitals, clinics, nursing homes, health maintenance organizations (HMOs), or other health care facilities. They may also work for colleges and universities, public health agencies, insurance companies, or health management firms. Civilian health services administrators perform duties similar to those performed in the military. Depending on the programs or facilities they manage, civilian health services administrators may also be called hospital administrators, nursing services directors, emergency medical services coordinators, and outpatient services directors.

Opportunities

The services have about 3,800 health services administrators. On average, they need 350 new health services administrators each year. After job training, health services administrators may be assigned to a variety of positions depending on their specialty. Usually, they work under the direction of experienced officers. With experience, they may manage one or more departments in a facility. In time, they may direct a health services facility. Eventually, they may advance to senior management positions responsible for planning health services at many facilities.

MANAGEMENT ANALYSTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Good management minimizes waste and inefficiency. By improving its management techniques, the military makes the best use of its human and material resources. Management analysts study and suggest better ways to organize, staff, and manage military activities.

What They Do

Management analysts in the military perform some or all of the following duties:

- Measure work load and calculate how many persons are needed to perform the work
- Study the information needs of managers and design manual or computerized systems to satisfy them
- Design organizations for new or existing offices
- Analyze work to be performed and develop an efficient implementation plan
- Design rules or procedures for work activities or information flow
- Gather data for studies by conducting interviews and reviewing records
- Write reports and give briefings on findings

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include management, operations research, and business or public administration. Helpful attributes include:

- Interest in solving problems
- Interest in collecting and analyzing data
- Ability to express ideas clearly and concisely

Work Environment

Management analysts normally work in offices, although they sometimes study work that occurs outdoors.

Training Provided

Job training consists of 6 to 10 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Management engineering techniques
- Methods of statistical analysis
- Internal review and analysis techniques
- Systems analysis procedures

Civilian Counterparts

Civilian management analysts often work in private management consulting firms. Many others work in hospitals, universities, government agencies, or manufacturing firms. Civilian management analysts perform duties similar to those performed in the military. They may specialize in areas such as records management analysis or systems management analysis.

Opportunities

The services have about 1,300 management analysts. On average, they need 50 new management analysts each year. After job training, management analysts are assigned to analysis teams. With experience, they may advance to senior management or command positions.

PERSONNEL MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

As with civilian employers, the military tries to find the best person for each job and encourages each individual to realize his or her full potential. Personnel managers direct programs to attract and select new personnel for the services, assign them to jobs, provide career counseling, and maintain personnel records.

What They Do

Personnel managers in the military perform some or all of the following duties:

- Plan recruiting activities to interest qualified young people in the military
- Direct testing and career counseling for military personnel
- Classify personnel according to job aptitude and interest and service need
- Direct the assignment of personnel to jobs and training
- Direct personnel recordkeeping operations
- Establish standards to determine the number of people to assign to activities
- Study military jobs to see how they can be improved and kept up-to-date with technology
- Plan for hiring, training, and assigning personnel for the future
- Develop programs to prevent and resolve equal opportunity problems

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Work Environment

Personnel managers work in offices.

Helpful Attributes

Helpful fields of study include personnel management, organizational development, industrial psychology, and labor relations. Helpful attributes include:

- Interest in working closely with people
- Interest in planning and directing the work of others
- Interest in working with computers

Training Provided

Job training consists of 5 to 16 weeks of classroom instruction. Course content typically includes:

- Military personnel policies and objectives
- Automated personnel systems
- Career development programs
- Equal opportunity problems
- Management and organizational concepts

Further training occurs in advanced courses.

Civilian Counterparts

Civilian personnel managers work for all types of businesses and industries, as well as for government agencies. They perform duties similar to those performed by military personnel managers. Depending on their specialty, they may also be called employment relations directors, employment managers, occupational analysts, industrial relations directors, equal employment opportunity representatives, or affirmative action coordinators.

Opportunities

The services have about 5,700 personnel managers. On average, they need 150 new personnel managers each year. After job training, personnel managers may be assigned to many different types of work, depending on their specialties. Usually, they begin by working under experienced personnel managers. In time, they may advance to senior management and command positions.

POSTAL DIRECTORS

Army
Navy
Air Force
Marine Corps

The military operates its own postal system, which is an extension of the U.S. Postal Service. This system handles mail sent between the services and civilians. Postal directors manage the postal operations for military bases and naval fleets.

What They Do

Postal directors in the military perform some or all of the following duties:

- Direct the operation of post offices and mail rooms on military bases and ships
- Work with the U.S. Postal Service to forward service mail
- Keep information on the location and mailing addresses of military personnel
- Prepare reports on postal operations
- Inspect post office activities and records
- Investigate postal irregularities

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include business or public administration and transportation management. Helpful attributes include:

- Ability to plan and organize
- Interest in administrative work
- Ability to express ideas clearly and concisely
- Interest in working closely with others

Work Environment

Postal directors usually work in offices and postal facilities.

Training Provided

Job training consists of 4 weeks of classroom instruction. Course content typically includes:

- Organization of postal operations
- Post office services, such as money orders and certified mail
- Procedures for handling international mail

Civilian Counterparts

Civilian postal directors work for the U.S. Postal Service. Also called postmasters, they perform duties similar to those performed by military postal directors.

Opportunities

The services have about 1,500 officers working as postal directors. On average, they need 20 new postal directors each year. Postal directors are usually selected from among officers who make their career in the various administration or management fields. Postal operations is only one of many administrative specialties they may work in at some time during their military career. Officers normally do not have a career exclusively in postal operations.

PURCHASING AND CONTRACTING MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military buys billions of dollars worth of equipment, supplies, and services from private industry each year. The services must make sure their purchases meet military specifications and are made at a fair price. Purchasing and contracting managers negotiate, write, and monitor contracts for purchasing equipment, materials, and services.

What They Do

Purchasing and contracting managers in the military perform some or all of the following duties:

- Review requests for supplies and services to make sure they are complete and accurate
- Prepare bid invitations or requests for proposals for contracts with civilian firms, which specify the type, amount, price, and delivery date for supplies or services
- Review bids or proposals and award contracts
- Prepare formal contracts, specifying all terms and conditions
- Review work to make sure that it meets the requirements of contracts

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include management and business or public administration. Helpful attributes include:

- Ability to develop detailed plans
- Interest in work requiring accuracy and attention to detail
- Interest in negotiating

Work Environment

Purchasing and contracting managers work in offices.

Training Provided

Job training consists of 3 to 10 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Purchasing and accounting procedures
- Use of computers in contract administration
- Supply and financial management

Further training occurs through advanced courses.

Civilian Counterparts

Civilian purchasing and contracting managers work for a wide variety of employers, including engineering, manufacturing, and construction firms. They perform duties similar to those performed by military purchasing and contract managers. They may also be called procurement services managers, purchasing directors, supply managers, or material control managers.

Opportunities

The services have about 7,200 purchasing and contracting managers. On average, they need 300 new purchasing and contracting managers each year. After training, purchasing and contracting managers work with and advise commanders on contract proposals. With experience, they may advance to senior management and command positions.

RECRUITING MANAGERS

Navy
Air Force
Marine Corps
Coast Guard

Each year, over 300,000 young men and women enlist in the military, making it the country's largest employer of youth. The services recruit young people with the kinds of talent needed to succeed in today's military. Recruiting managers plan and direct the activities of recruiting specialists who provide information to young people about military careers.

ARMY
ARMY
ARMY

What They Do

Recruiting managers in the military perform some or all of the following duties:

- Plan programs to inform young people about military careers
- Direct staff in local recruiting offices who carry out programs to inform the public about military careers
- Speak with local civic groups, schools, parents, and young people about military careers
- Prepare reports and brief commanders on recruiting goals and results

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include personnel management, communications, and public relations. Helpful attributes include:

- Interest in working closely with people
- Ability to speak effectively to large and small groups

Work Environment

Recruiting managers usually work in offices.

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian recruiting managers work for personnel departments in business and government, searching for employment candidates. They also work for colleges, directing the activities of recruiters in their effort to attract talented high school students.

Opportunities

The services have about 400 recruiting managers. On average, they need 10 new managers each year. Normally, officers must be in the military for a few years before they are eligible to become recruiting managers. They do not always make a career in the recruiting field. Some spend only a few years in recruiting and then change to another occupation, often in the field of personnel or administration. Officers remaining in recruiting may advance to senior management or command positions in this field.

STORE MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military operates retail stores for the convenience of service men and women. In some areas, particularly overseas, the goods and services offered at military stores, laundries, and barbershops are not otherwise available. Store managers direct the operation of retail service, food, and merchandise outlets. They also manage personnel who store food, supplies, and equipment.

What They Do

Store managers in the military perform some or all of the following duties:

- Direct personnel in purchasing, pricing, and selling food, supplies, and equipment
- Direct personnel in receiving, storing, and issuing supplies and equipment
- Supervise the inspection, care, and testing of products before their use or sale
- Plan training programs for new workers
- Direct inventory, accounting, and other record keeping activities
- Plan and prepare store budgets

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include management, accounting, marketing, business administration, and industrial management. Helpful attributes include:

- Interest in planning work schedules
- Interest in managing a business
- Interest in planning and directing the work of others

Work Environment

Store managers work in retail stores or warehouses on land and aboard ships.

Training Provided

Job training consists of 5 to 10 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Accounting and record keeping
- Inventory control
- Retail store and warehouse management
- Personnel and office administration
- Budget management

Civilian Counterparts

Civilian store managers may work in many kinds of retail businesses. Some manage grocery, department, discount, and other large stores. Others manage warehouses that receive, store, and issue merchandise and supplies for retail outlets. Civilian store managers perform duties similar to those performed in the military. They may also be called retail store managers and distribution warehouse managers.

Opportunities

The services have about 1,000 store managers. On average, they need 70 new store managers each year. After job training, store managers are assigned to supply, exchange, or food service units. With experience, they may advance to senior management and command positions.

SUPPLY AND WAREHOUSING MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military needs vast amounts of supplies to feed and supply their personnel. Tons of materials such as food, fuel, medicine, and ammunition must be ordered, stored, and distributed each day. Supply and warehousing managers plan and direct personnel who order, receive, store, and issue equipment and supplies. Turn to page 432 for more information about supply and warehousing managers.

What They Do

Supply and warehousing managers in the military perform some or all of the following duties:

- Analyze the demand for supplies and forecast future needs
- Direct personnel who receive, inventory, store, and issue supplies and equipment
- Manage the inspection, shipping, handling, and packaging of supplies and equipment
- Direct the preparation of reports and records
- Evaluate bids and proposals submitted by potential suppliers
- Study ways to use space and distribute supplies efficiently

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include business administration, inventory management, and operations research. Helpful attributes include:

- Interest in planning and directing the work of others
- Ability to express ideas clearly and concisely

Work Environment

Supply and warehousing managers usually work in offices and warehouses. At times, they may be exposed to loud noise from machines and equipment.

Training Provided

Job training consists of 2 to 16 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Warehousing and storage procedures
- Handling and packaging procedures
- Administrative procedures
- Field supply management
- Planning for future supply needs

Civilian Counterparts

Civilian supply and warehousing managers work for storage companies, manufacturers, hospitals, schools, and government agencies. They perform duties similar to those performed by military supply and warehousing managers. They may also be called warehouse managers or operations managers.

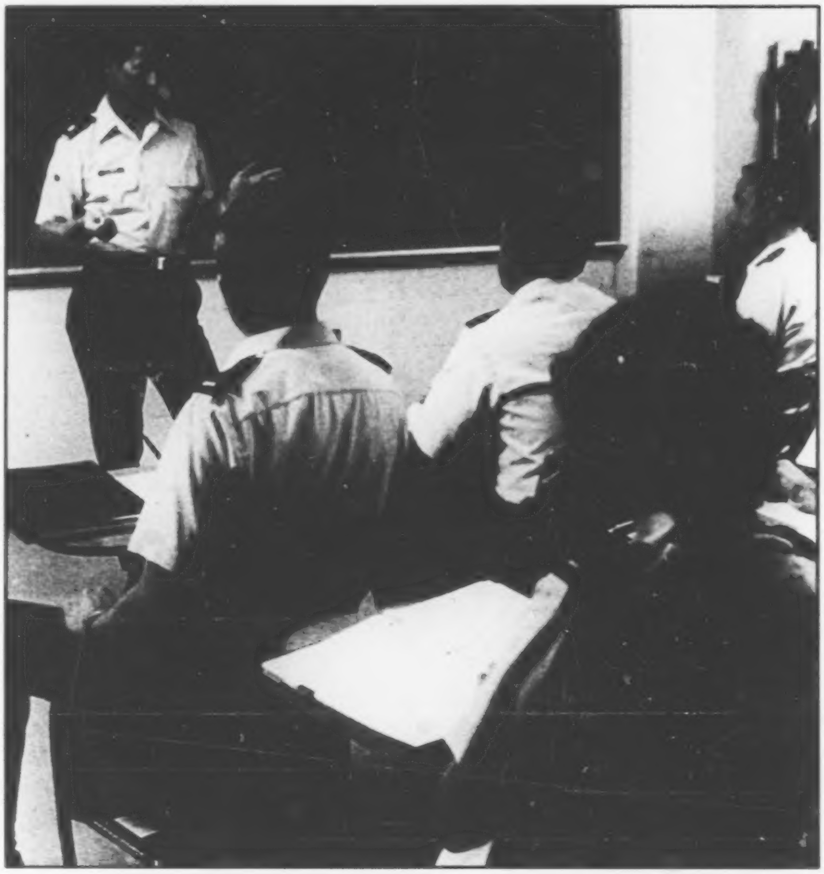
Opportunities

The services have about 14,200 supply and warehousing managers. On average, they need 600 new managers each year. After job training, supply and warehousing managers are assigned to positions in supply or munitions management. With experience, they may advance to senior management or command positions.

TEACHERS AND INSTRUCTORS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military provides training and educational opportunities for all personnel. Teachers and instructors conduct classes in such academic subjects as engineering, physical science, social science, and nursing. Teachers and instructors teach military personnel subjects that are related to their military occupations.



What They Do

Teachers and instructors in the military perform some or all of the following duties:

- Develop course content, training outlines, and lesson plans
- Prepare training aids, assignments, and demonstrations
- Deliver lectures
- Conduct laboratory exercises and seminars
- Give tests and evaluate student progress
- Diagnose individual learning difficulties and offer help

Special Requirements

A 4-year college degree is normally required to enter this occupation. Some specialties require a master's degree.

Helpful Attributes

Helpful attributes include:

- Ability to express ideas clearly and concisely
- Interest in teaching
- Preference for working closely with people

Work Environment

Teachers and instructors usually work in classrooms and lecture halls.

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian teachers and instructors work in junior colleges, colleges, and universities. They perform duties similar to those performed in the military. They may teach several different courses within the same field of study.

Opportunities

The services have about 2,100 officers working as teachers or instructors. On average, 100 officers become military teachers and instructors each year. They are usually selected from officers trained and working in a military occupation. Many officers return to their regular occupations after teaching, but some remain as full-time teachers. Eventually, teachers may become tenured professors at the service academies or other military colleges or managers of education programs.

TRAINING AND EDUCATION DIRECTORS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military places great importance on training to prepare service men and women for their military careers. Programs include training in technical skills, physical fitness, and leadership development. Education and training directors plan, develop, and manage education and training programs for military personnel.

What They Do

Education and training directors in the military perform some or all of the following duties:

- Develop new training courses
- Review and approve course material and training outlines prepared by instructors
- Plan and evaluate new teaching methods
- Assign duties to instructors, curriculum planners, and training aids specialists
- Evaluate the progress of students and instructors
- Train instructors in course subject matter
- Develop training and educational policies and objectives
- Coordinate training for military personnel at civilian schools or through correspondence courses

Special Requirements

A 4-year college degree is normally required to enter this occupation. Some specialties require a master's degree.

Training Provided

No initial job training is provided to officers in this occupation.

Helpful Attributes

Helpful fields of study include education, physical education, organizational development, personnel management, and industrial psychology. Helpful attributes include:

- Interest in developing educational programs
- Preference for working with people
- Interest in work involving many subject areas

Work Environment

Education and training directors work in offices and classroom training facilities. Those directing physical training work in gyms or outdoor settings.

Civilian Counterparts

Civilian education and training directors work in schools, colleges, universities, vocational and technical schools, and training departments in business and industry. They perform duties similar to those performed by military education and training directors. They may also be called educational program directors, vocational training directors, and education supervisors.

Opportunities

The services have about 2,500 officers working as education and training directors. On average, they need 150 officers to become training directors each year. Education and training directors are usually selected from officers in many different occupational fields. They may direct training in their own or another occupational field. This occupation is normally available to officers who have had experience in an occupation besides education.

TRANSPORTATION MAINTENANCE MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military's transportation system is made up of many different kinds of carriers, including ships, aircraft, trucks, and buses. Repair and maintenance schedules for each type of vehicle must be carefully planned and managed. Transportation maintenance managers direct personnel who repair and maintain the military's transportation equipment.

What They Do

Transportation maintenance managers in the military perform some or all of the following duties:

- Direct repair shop and garage operations
- Set work schedules for repair shop staff
- Oversee the ordering and use of repair parts, equipment, and supplies
- Check repairs to make sure they are complete and finished on schedule
- Oversee the preparation of maintenance records and reports
- Develop maintenance standards and policies
- Plan and develop training programs for staff

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include business administration, transportation management, vehicle and maintenance operations, and mechanical engineering. Helpful attributes include:

- Interest in planning and directing the work of others
- Interest in developing detailed plans

Work Environment

Transportation maintenance managers work in offices located in maintenance yards, shops, and garages.

Training Provided

Job training consists of 16 to 22 weeks of classroom instruction. Course content typically includes:

- Management of aircraft or aircraft electronics (avionics) maintenance
- Management of vehicle, railroad, and other equipment maintenance
- Use of management information systems

Civilian Counterparts

Civilian transportation maintenance managers work in auto, bus, truck, and heavy construction equipment repair garages. They also work for aircraft service companies, aircraft builders, and commercial airline companies. They perform duties similar to those performed by military transportation maintenance managers.

Opportunities

The services have about 5,700 transportation maintenance managers. On average, they need 150 new transportation maintenance managers each year. After job training, transportation maintenance managers gain experience managing maintenance personnel. In time, they may become managers of larger maintenance facilities and advance to command positions.

TRANSPORTATION MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Each year, the military transports thousands of service men and women and tons of material to bases across the U.S. and overseas. Ships, aircraft, trucks, buses, and trains are all part of the military's transportation system. Transportation managers direct the transport of military personnel and material by air, road, rail, and water. Turn to page 434 for more information about transportation managers.

What They Do

Transportation managers in the military perform some or all of the following duties:

- Determine the fastest and most economical way to transport cargo or personnel
- Direct the packing and crating of cargo
- Direct the loading of freight and passengers
- Schedule shipments to ensure fast and timely deliveries
- Schedule pick-up and delivery of shipments
- Oversee the handling of special items, such as medicine and explosives
- See that transport forms, records, and reports are prepared correctly

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include transportation management, supply management, operations research, and business or public administration. Helpful attributes include:

- Interest in planning and directing the work of others
- Ability to work under tight schedules

Work Environment

Transportation managers work in cargo and passenger terminals and depots.

Training Provided

Job training consists of between 8 and 12 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Transportation management
- Ways to work with civilian and other military service carriers
- Freight classifications
- Handling of special items, such as medicine and explosives

Civilian Counterparts

Civilian transportation managers work for airlines, railroads, bus lines, trucking companies, and shipping firms. They perform duties similar to those performed by military transportation managers. However, civilian transportation managers normally specialize in one area of transportation, such as air, water, truck, or railroad transportation.

Opportunities

The services have about 9,200 transportation managers. On average, they need 300 new transportation managers each year. After job training, transportation managers gain experience on the job. In time, they may advance to senior management or command positions in cargo transportation operations.

Human Services Occupations

Chaplains
Social Workers

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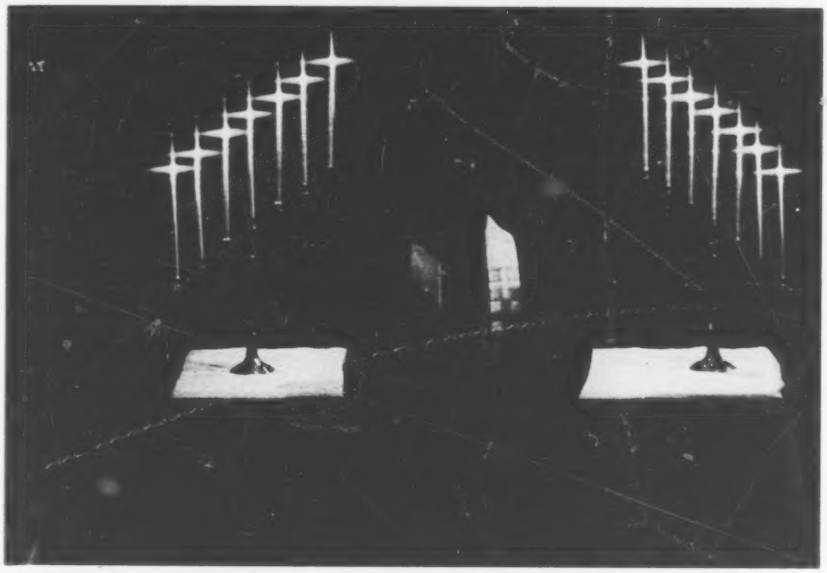
CHAPLAINS

Army
Navy
Air Force

The military provides for the spiritual needs of its personnel by offering religious services, moral guidance, and counseling. Chaplains conduct military worship services for military personnel and perform other spiritual duties covering beliefs and practices of all religious faiths.



What They Do

Chaplains in the military perform some or all of the following duties:

- Conduct worship services in a variety of religious faiths
- Perform religious rites and ceremonies, such as weddings and funeral services
- Visit and provide spiritual guidance to personnel in hospitals and to their families
- Counsel individuals who seek guidance
- Promote attendance at religious services, retreats, and conferences
- Oversee religious education programs, such as Sunday school and youth groups
- Train lay leaders who conduct religious education programs
- Prepare religious speeches and publications

Helpful Attributes

Helpful attributes include:

- Ability to express ideas clearly and concisely
- Interest in planning and directing the work of others
- Sensitivity to the needs of others

Special Requirements

A master's degree in theology is required to enter this occupation. Ordination and ecclesiastical endorsement from a recognized religious denomination are also required.

Training Provided

Job training consists of 3 to 7 weeks of classroom instruction. Course content typically includes:

- Role and responsibility of military chaplains
- Administration and leadership techniques
- Training and education methods
- Procedures for planning programs
- Pastoral counseling methods

Further training occurs on the job and through advanced courses.

Work Environment

Chaplains in the military usually work in offices, hospitals, and places of worship. Those assigned to sea duty work aboard ships. Those assigned to land combat units sometimes work outdoors.

Civilian Counterparts

Civilian chaplains work in places of worship, hospitals, universities, and correctional institutions. They perform duties similar to those performed in the military. However, they are almost always affiliated with a particular religious faith. Chaplains are also called clergy, ministers, preachers, priests, or rabbis.

Opportunities

The services have about 3,000 chaplains of various faiths. On average, they need 150 new chaplains each year. Military chaplains may advance to become directors of religious programs in their services.

SOCIAL WORKERS

Army
Navy
Air Force

The military needs close cooperation and a spirit of teamwork among its men and women. Social workers focus on improving conditions that cause social problems, such as drug and alcohol abuse, racism, and sexism.

What They Do

Social workers in the military perform some or all of the following duties:

- Counsel military personnel and their family members
- Supervise counselors and caseworkers
- Survey military personnel to identify problems and plan solutions
- Plan social action programs to rehabilitate personnel with problems
- Plan and monitor equal opportunity programs
- Conduct research on social problems and programs
- Organize community activities on military bases

Physical Demands

Social workers need to be able to speak clearly and distinctly to work with clients.

Special Requirements

A 4-year college degree in social work or related social sciences is required to enter this occupation. Some specialties require a master's degree.

Work Environment

Social workers in the military usually work in offices or clinics.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Sensitivity to the needs of others
- Ability to express ideas clearly and concisely
- Interest in research and teaching

Training Provided

Job training consists of 16 to 24 weeks of instruction. Course content typically includes:

- Ways of controlling drug and alcohol abuse among military personnel
- Management of equal opportunity programs

Civilian Counterparts

Civilian social workers work for hospitals, human service agencies, and federal, state, county, and city governments. They perform duties similar to those performed by military social workers. However, civilian social workers usually specialize in a particular field, such as family services, child welfare, or medical services. They may also be called social group workers, medical social workers, psychiatric social workers, and social welfare administrators.

Opportunities

The services have about 500 social workers. On average, they need 30 new social workers each year. After job training, social workers are assigned to counseling or assistance centers. With experience, they may advance to senior management positions.

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Media and Public Affairs Occupations

Audiovisual Production Directors
Band Managers
Public Information Officers

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AUDIOVISUAL PRODUCTION DIRECTORS

Army
Navy
Air Force
Marine Corps

The services produce many motion pictures, videotapes, and TV and radio broadcasts. These productions are used for training, news, and entertainment. Audiovisual production directors manage audiovisual projects. They may direct day-to-day filming or broadcasting or manage other directors.

What They Do

Audiovisual production directors in the military perform some or all of the following duties:

- Plan and organize audiovisual projects, including films, videotapes, TV and radio broadcasts, and artwork displays
- Determine the staff and equipment needed for productions
- Set production controls and performance standards for audiovisual projects
- Direct the preparation of scripts and determine camera-shooting schedules
- Direct actors and technical staff during performances

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include audiovisual production, cinematography, communications, and graphic arts. Helpful attributes include:

- Interest in organizing and planning activities
- Interest in planning and directing the work of others
- Ability to transform ideas into visual images

Work Environment

Audiovisual production directors usually work in studios or offices. They may direct film crews on location in military camps or combat zones.

Training Provided

Job training consists of 15 to 99 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Public information management principles
- Management of military broadcasting facilities
- Motion picture and television production management

Civilian Counterparts

Civilian audiovisual production directors work for television networks and stations, motion picture companies, public relations and advertising firms, and government agencies. They perform duties similar to those performed by military audiovisual directors.

Opportunities

The services have about 250 audiovisual production directors. On average, they need 10 new audiovisual production directors each year. After job training, audiovisual production directors work in production units directing the work of audiovisual technicians and specialists. In time, they may advance to management positions in the broadcasting and public affairs fields.

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BAND MANAGERS

Army
Navy
Air Force
Marine Corps

Bands have a long tradition in the armed services. Military bands all over the world provide music for marching and parade activities, concerts, and stage presentations. Band managers plan, develop, and direct the activities of military bands. They also conduct band performances during concerts and parades.

What They Do

Band managers in the military perform some or all of the following duties:

- Plan musical programs
- Lead bands and choirs in performances
- Supervise training and rehearsal of musicians and choirs
- Determine funding needs for bands and choirs
- Plan purchases of instruments, equipment, and facilities
- Provide commanders with ideas for musical programs and ceremonies

Physical Demands

A "good ear" for musical notes is required.

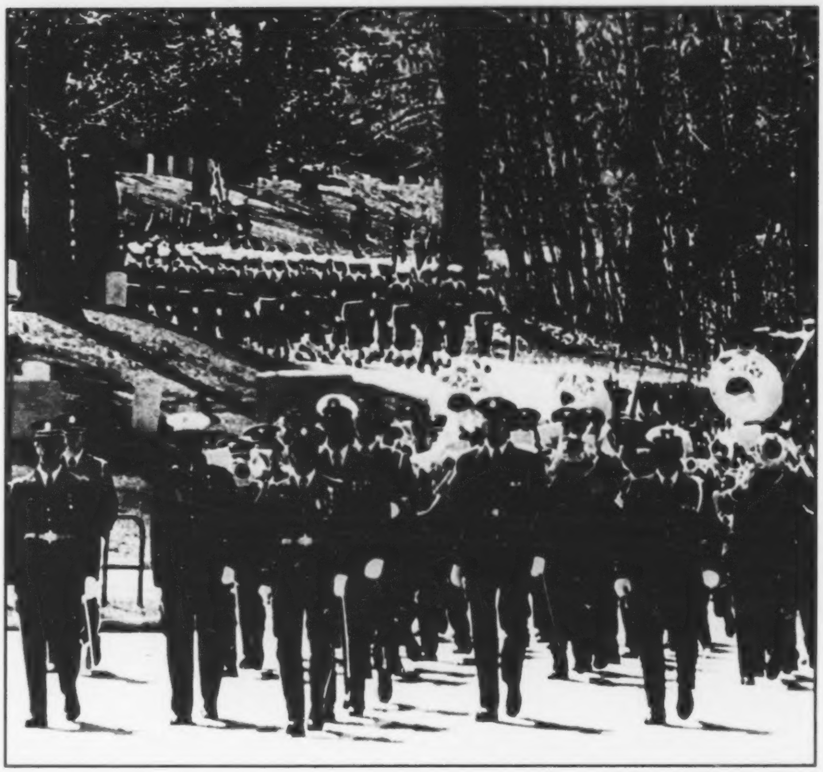
Special Requirements

A 4-year college degree in music or music education is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in music theory
- Appreciation for many types of music, including marches, classics, pop, and jazz
- Interest in planning and organizing the work of others



Work Environment

Band managers usually work in offices and band halls. They may work outdoors when conducting or practicing for parades.

Training Provided

Job training consists of 20 to 40 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Band arranging and conducting
- Concert and marching band styles and techniques
- Band administration and management

Civilian Counterparts

Many civilian band managers work for college and high school music departments and civic and community orchestras. Others work in the motion picture, television, and studio recording industries. Civilian band managers perform duties similar to those performed in the military. They may also be called band directors, band leaders, orchestra leaders, or conductors.

Opportunities

The services have about 100 band managers. On average, they need 2 new band managers each year. After job training, band managers are assigned to military band units, where they plan and direct musical programs. With experience, they may assume command of larger military bands or direct the activities of several bands.

PUBLIC INFORMATION OFFICERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The services have public information officers to keep the public informed about the military. These officers answer questions from the news media, members of Congress, private citizens, and service personnel. They also prepare reports and news releases about activities on military bases and service policies and operations.

What They Do

Public information officers in the military perform some or all of the following duties:

- Supervise the preparation of reports and other releases to the public and the military
- Brief military personnel before they meet with the public and the news media
- Provide information to newspapers, TV and radio stations, and civic organizations
- Schedule and conduct interviews and news conferences
- Plan activities to improve public relations

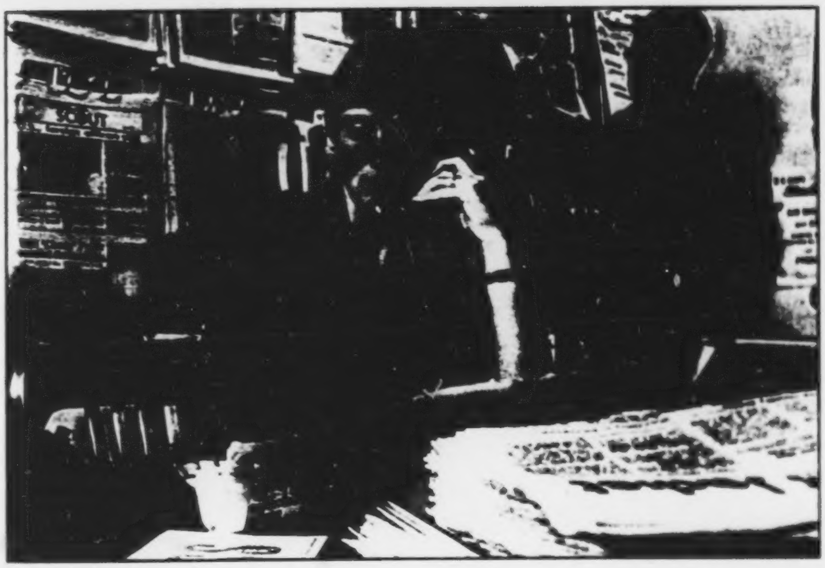
Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include journalism, communications, public relations, and advertising. Helpful attributes include:

- Ability to write clearly and simply
- Ability to speak effectively in public
- Interest in news and current events



Training Provided

Job training consists of 8 weeks of classroom instruction. Course content typically includes:

- Department of Defense policies
- Principles of public information and community relations

Civilian Counterparts

Civilian public information officers work for large corporations, government agencies, colleges and universities, and community groups. They perform duties similar to those performed by military public information officers. They may also be called public relations representatives and corporate communications specialists.

Work Environment

Public information officers usually work in offices.

Opportunities

The services have about 800 public information officers. On average, they need 20 new public information officers each year. After job training, public information officers normally direct specialists who gather information for reports, respond to requests for information, and write news releases. With experience, public information officers prepare and give briefings, speeches, and interviews. Eventually, they may advance to senior public affairs positions.

Health Diagnosing and Treating Practitioner Occupations

- Dentists
- Optometrists
- Physicians and Surgeons
- Podiatrists
- Psychologists
- Veterinarians

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DENTISTS

Army
Navy
Air Force

Dental care is a basic health service provided to men and women in the military. Military dentists examine, diagnose, and treat diseases and disorders of the mouth. They may practice general dentistry or work in one of several specialties.

What They Do

Dentists in the military perform some or all of the following duties:

- Examine patients' teeth and gums to detect signs of disease or tooth decay
- Examine X-rays to determine the soundness of teeth and the alignment of teeth and jaws
- Locate and fill tooth cavities
- Perform oral (mouth) surgery to treat problems with teeth, gums, or jaws
- Develop and fit dentures (artificial teeth) to replace missing teeth
- Construct and fit dental devices, such as braces and retainers, for straightening teeth
- Plan dental health programs for patients to help prevent dental problems

Special Requirements

A doctor of dentistry degree and additional training in a dental specialty are required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Good eye-hand coordination

Work Environment

Dentists work in hospitals and dental clinics on land and aboard ships.

Civilian Counterparts

Civilian dentists work in private practice, public health facilities, and dental research organizations. They perform duties similar to those performed in the military and specialize in similar areas. Depending on their specialty, dentists may also be called oral pathologists, endodontists, oral surgeons, orthodontists, pedodontists, prosthodontists, periodontists, or public health dentists.

Training Provided

No initial job training is provided to officers in this occupation.

Opportunities

The military has about 4,300 dentists. On average, the services need 300 new dentists each year. Newly commissioned dentists are assigned to dental clinics to practice general dentistry or a dental specialty. Dentists who demonstrate leadership and managerial qualities may advance to administer dental facilities and programs.

OPTOMETRISTS

Army
Navy
Air Force

Eye care is part of the full health coverage provided to military personnel. The most common eye problem is the need for corrective lenses. Optometrists examine eyes and treat vision problems by prescribing glasses or contact lenses. They refer patients with eye diseases to ophthalmologists (eye medical doctors).

What They Do

Optometrists in the military perform some or all of the following duties:

- Check patient vision using eye charts
- Examine eyes for glaucoma and other diseases
- Measure patient nearsightedness, farsightedness, depth perception, and other vision problems using optical instruments
- Prescribe corrective lenses
- Prescribe training exercises to strengthen weak eye muscles
- Instruct patients on how to wear and care for contact lenses

Special Requirements

A doctor of optometry degree and a state license to practice optometry are required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Preference for working closely with people
- Desire to help others
- Interest in work requiring accuracy and attention to detail

Work Environment

Optometrists work in clinics and hospitals.

Training Provided

No initial job training is provided to officers in this occupation. The Army has a program to provide financial support to optometry students in return for a period of obligated service.

Civilian Counterparts

Most civilian optometrists work in private practice. Some work for hospitals, clinics, public health agencies, or optical laboratories. Civilian optometrists perform duties similar to those performed in the military.

Opportunities

The services have about 450 optometrists. On average, they need 50 new optometrists each year. Newly commissioned optometrists are assigned to clinics or hospitals. In time, they may advance to senior management positions in the health service field.

PHYSICIANS AND SURGEONS

Army
Navy
Air Force

Military physicians and surgeons represent all of the major fields of medical specialization. Physicians and surgeons are the chief providers of medical services to military personnel and their dependents. They examine patients, diagnose their injuries or illnesses, and provide medical treatment. Turn to page 426 for more information about physicians and surgeons.

What They Do

Physicians and surgeons in the military perform some or all of the following duties:

- Examine patients to detect abnormalities in pulse, breathing, or other body functions
- Determine presence and extent of illness or injury by reviewing medical histories, X-rays, laboratory reports, and examination reports
- Develop treatment plans that may include medication, therapy, or surgery
- Perform surgery to treat injuries or illnesses
- Advise patients on their health problems and personal habits
- Coordinate the activities of nurses, physician assistants, medical specialists, therapists, and other medical personnel
- Conduct medical research

Special Requirements

A doctor of medicine or osteopathy degree and advanced training in a medical specialty are required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Ability to express ideas clearly and concisely

Work Environment

Physicians and surgeons work in hospitals and clinics on land and aboard ships.

Training Provided

No initial job training is provided to officers in this occupation. However, advanced courses and programs in medical specialties are available. In addition, scholarships for advanced medical training are available in return for an obligated period of military service.

Civilian Counterparts

Civilian physicians work for hospitals or clinics or in private practice. They perform the same duties and work in the same areas of specialization as military physicians.

Opportunities

The services have a total of about 10,900 physicians and surgeons, including all general practitioners and specialists. On average, they need 1,100 new physicians and surgeons each year. The services give several hundred scholarships yearly to attend civilian medical schools or the Uniformed Services University of the Health Sciences in Bethesda, Maryland, in return for an obligated period of military service after graduation. The services normally hire physicians who have completed medical school and their internships. However, some services have programs to grant early officer commissions to civilians who are in medical school, internship, or residency status in return for an obligated period of service. After gaining experience in the military, physicians and surgeons may advance to senior management or command positions in the services' medical corps.

PODIATRISTS

Army
Navy
Air Force

The military provides the full range of health care services to its personnel. Some military doctors specialize in treating certain parts of the body. Podiatrists diagnose and treat foot injuries or diseases.

What They Do

Podiatrists in the military perform some or all of the following duties:

- Examine feet to discover the causes of ailments
- Arrange for laboratory tests and diagnostic X-rays
- Treat foot ailments, such as fractures, muscle damage, bunions, and ingrown toenails
- Perform foot surgery when necessary
- Plan rehabilitation programs to help patients regain full use of their feet
- Instruct and supervise assistants

Special Requirements

A medical degree in podiatry is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Patience in working with people whose injuries heal slowly

Work Environment

Podiatrists work in clinics and hospitals on land and aboard ships.

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian podiatrists work for hospitals or clinics and in private practice. They perform duties similar to those performed by military podiatrists.

Opportunities

The services have about 80 podiatrists. On average, they need 10 new podiatrists each year. Newly commissioned podiatrists are assigned to medical units, where they treat patients. With experience, they may advance to senior management or command positions in the medical corps and become responsible for health service administration.

PSYCHOLOGISTS

Army
Navy
Air Force

Psychological research and treatment are important to national defense. Research can show how to improve military training, job assignment, and equipment design. Treatment can help personnel cope with stress. Psychologists conduct research on human behavior and treat patients with mental problems.

What They Do

Psychologists in the military perform some or all of the following duties:

- Conduct research on human and animal behavior, emotions, and thinking processes
- Conduct research on aptitude and job performance
- Give psychological tests and interpret results to diagnose patients' problems
- Treat patients individually and in groups
- Conduct experiments to determine the best equipment design, work procedures, and training course content
- Write research reports
- Direct research projects performed by outside contractors

Special Requirements

A 4-year college degree in psychology is required to enter this occupation. Some specialties require a master's degree.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Interest in scientific research
- Interest in mathematics and statistics

Work Environment

Psychologists usually work in offices, hospitals, clinics, and other medical facilities on land and aboard ships.

Civilian Counterparts

Some civilian psychologists treat patients in private practice, hospitals, school systems, and mental health centers. They are called clinical psychologists, counseling psychologists, or educational psychologists. Other civilian psychologists conduct research work for universities, research firms, and government agencies. They are called experimental psychologists, social psychologists, and psychometricians.

Training Provided

No initial job training is provided for officers in this occupation. Advanced courses are available in some specialties.

Opportunities

The services have about 650 psychologists. On average, they need 50 new psychologists each year. Newly commissioned research psychologists assist experienced officers in conducting experiments and research. With experience, they may lead projects of their own. New clinical psychologists may treat patients in military clinics. Eventually, both research and clinical psychologists may become directors of offices or laboratories.

VETERINARIANS

Army
Air Force

The military is the largest employer of veterinarians in the United States. Military veterinarians help protect the health of military personnel by studying diseases transmitted to humans from food and animals. They inspect food and food processing plants for disease and parasites. They also treat guard dogs, horses, and other animals.

What They Do

Veterinarians in the military perform some or all of the following duties:

- Inspect food to determine its condition and quality
- Inspect meat packing, food processing, and food storage plants for cleanliness
- Plan measures to control contagious diseases that may be transmitted by food or animals
- Inoculate animals against infectious diseases such as rabies and encephalitis
- Study the effects of diseases, poisons, and radiation on laboratory animals
- Treat sick or injured military guard dogs, horses, and other animals
- Research animal diseases

Special Requirements

A doctor of veterinary medicine degree and experience in a veterinary specialty are required to enter this occupation.

Work Environment

Veterinarians work in food processing or storage plants or in veterinary clinics and laboratories. They may work outdoors while examining animals or inspecting military facilities for sanitary conditions.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Interest in medicine and medical research
- Interest in working with animals
- Interest in collecting and analyzing scientific data

Training Provided

No initial job training is provided to officers in this occupation. However, advanced courses are offered in food inspection and hygiene.

Civilian Counterparts

Most civilian veterinarians work in private practice providing medical care and treatment for animals. Some veterinarians work in government agencies such as the U.S. Food and Drug Administration and U.S. Public Health Service. Few civilian veterinarians perform the food inspection functions of military veterinarians.

Opportunities

The military has about 500 veterinarians. On average, the services need 40 new veterinarians each year. Newly commissioned veterinarians are assigned various veterinary specialties, ranging from disease research to food inspection. After demonstrating leadership qualities, veterinarians may advance to senior management or command positions within the veterinary field.

Health Care Occupations

- Dietitians
- Environmental Health Officers
- Occupational Therapists
- Pharmacists
- Physical Therapists
- Physician Assistants
- Registered Nurses
- Speech Therapists

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DIETITIANS

Army
Navy
Air Force

Dietitians are part of the military's health care staff. They are experts in the nutritional needs of hospital patients and outpatients. Dietitians manage medical food service facilities and plan meals for hospital patients and outpatients who need special diets.

What They Do

Dietitians in the military perform some or all of the following duties:

- Set policies for hospital food service operations
- Inspect hospital food service and preparation areas to be sure they meet sanitation and safety standards
- Plan and organize training programs for medical food service personnel
- Develop special diets for patients based on instructions from doctors
- Plan menus for hospital meals
- Interview patients to determine whether they are satisfied with their diet
- Develop hospital food service budgets
- Provide information on nutrition to the military community

Special Requirements

A 4-year college degree in food and nutrition or institutional management is required to enter this occupation. Some specialties require completion of a general dietetic internship.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Interest in nutrition and food preparation
- Interest in interpreting scientific and medical data

Work Environment

Dietitians work in hospitals, clinics, and aboard ships.

Civilian Counterparts

Civilian dietitians work in hospitals, clinics, and other health care facilities. They perform duties similar to those performed by military dietitians. Dietitians also work for college food services, restaurants, industrial food services, and research institutions. Civilian dietitians may specialize in specific areas of dietetics, such as consultation, clinical dietetics, and community health.

Training Provided

No initial job training is provided to officers in this occupation. However, the Air Force and Army offer internship programs in dietetics that are approved by the American Dietetic Association.

Opportunities

The services have about 300 dietitians. On average, 30 new dietitians are needed each year. Newly commissioned dietitians are assigned to military hospitals, clinics, or ships, where they plan and direct the work of food service personnel. They may advance to senior management positions in hospital food service programs.

ENVIRONMENTAL HEALTH OFFICERS

Army
Navy
Air Force
Coast Guard

The services take great care to ensure safe working conditions and a clean environment. A clean, safe, and healthy environment results in happier employees and better work. Environmental health specialists study the air, ground, and water to identify and analyze sources of pollution and its effects. They also direct programs to control safety and health hazards in the work place.

What They Do

Environmental health specialists in the military perform some or all of the following duties:

- Determine methods to collect environmental data for research projects and surveys
- Analyze data to identify pollution problem areas
- Inspect food samples to detect any spoilage or disease
- Develop pollution control plans and policies
- Conduct health education programs
- Work with civilian public health officials in performing studies and analyzing results

Special Requirements

A 4-year college degree is normally required to enter this occupation. A degree in biomedical or biological science is required to enter some specialties in this occupation.

Training Provided

No initial job training is provided to officers in this occupation.

Helpful Attributes

Helpful fields of study include chemistry, biology, environmental sciences, soil science, civil engineering, and veterinary science. Helpful attributes include:

- Interest in protecting the environment
- Interest in conducting research or analytical studies
- Interest in work requiring accuracy and attention to detail

Work Environment

Environmental health specialists normally work in offices or research laboratories. They work outdoors while conducting environmental studies and surveys or inspecting facilities.

Civilian Counterparts

Civilian environmental health specialists work for engineering firms, manufacturing firms, and government agencies. They perform duties similar to those performed by military environmental health specialists. Depending on their specialty, they may be called environmental scientists, air pollution analysts, soil analysts, industrial hygienists, or water quality analysts.

Opportunities

The services have about 350 environmental health specialists. On average, they need 20 new environmental health specialists each year. New environmental health specialists are assigned to environmental health teams. After demonstrating leadership qualities, they may advance to senior management or command positions.

OCCUPATIONAL THERAPISTS

Army
Navy
Air Force

Occupational therapy is a program of treatment and exercise for patients disabled from illness or injury. Through therapy patients learn to adjust to disabilities, regain independence, and prepare to return to work. Occupational therapists plan and administer therapy to help patients with physical, mental, or emotional disabilities. They give special treatment and exercises and sometimes fit patients with artificial arms and legs (prostheses).

What They Do

Occupational therapists in the military perform some or all of the following duties:

- Plan and manage occupational therapy programs
- Test and interview patients to diagnose the extent of their disabilities
- Consult with doctors and other therapists to determine appropriate therapy
- Supervise occupational therapy specialists in treating patients
- Evaluate the progress and improvement of patients during therapy
- Teach treatment, exercises, and the use of artificial devices to new therapists
- Set up and maintain therapeutic equipment, such as exercise machines and whirlpools

Physical Demands

Occupational therapists may have to lift and support patients during therapeutic exercises and treatment.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Interest in developing detailed plans and treatments
- Patience to work with people whose injuries heal slowly
- Ability to communicate effectively

Special Requirements

A 4-year college degree in occupational therapy and completion of a clinical program in occupational therapy are required to enter this occupation. Depending on specialty, eligibility for registration with the American Occupational Therapy Association may also be required.

Work Environment

Occupational therapists work in hospitals, clinics, and rehabilitation centers.

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian occupational therapists work in hospitals, rehabilitation centers, schools, and community mental health centers. They perform duties similar to those performed by military occupational therapists. Civilian occupational therapists often specialize in treating a particular type of patient, such as children, the elderly, or those who have lost arms or legs (amputees).

Opportunities

The services have about 150 occupational therapists. On average, they need 10 new therapists each year. Occupational therapists have the opportunity to advance to senior management or command positions in medical administration.

PHARMACISTS

Army
Navy
Air Force

Drugs and medicines are sometimes prescribed by doctors when treating patients in military hospitals and clinics. Pharmacists manage the purchasing, storing, and dispensing of drugs and medicines.

What They Do

Pharmacists in the military perform some or all of the following duties:

- Manage pharmacy technicians who prepare, label, and dispense orders for drugs and medicines
- Advise doctors and patients on the proper use and side effects of drugs and medicines
- Train medical, nursing, and pharmacy staffs on the use of drugs
- Consult on drug and medicine research programs
- Check drug and medicine supplies and reorder when necessary
- Direct pharmacy record keeping

Special Requirements

A 4-year college degree in pharmacy and a state license to practice pharmacy are required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in understanding the effects of drugs and medicines
- Interest in chemical formulas
- Interest in work requiring accuracy and attention to detail

Work Environment

Pharmacists work in hospitals and clinics on land and aboard ships.

Civilian Counterparts

Civilian pharmacists work for pharmacies, drug stores, and drug departments of stores and supermarkets. They also work for hospitals, nursing homes, and clinics. They perform duties similar to those performed by military pharmacists. Civilian pharmacists who specialize in radioactive drugs (radioisotopes) are known as radiopharmacists.

Training Provided

No initial job training is provided to officers in this occupation.

Opportunities

The services have about 500 pharmacists. On average, they need 40 new pharmacists each year. Newly commissioned pharmacists are assigned to military hospitals or clinics, where they manage daily operations. In time, pharmacists plan and direct pharmacy or other health programs.

PHYSICAL THERAPISTS

Army
Navy
Air Force

Physical therapy is a program of treatment and exercise to rehabilitate patients disabled because of illness or injury. Physical therapists plan and administer treatments to restore strength and mobility to ill or injured patients.

What They Do

Physical therapists in the military perform some or all of the following duties:

- Test and interview patients to determine the extent of their disabilities
- Consult with doctors to discuss and evaluate patients' progress
- Plan individual physical therapy programs
- Counsel patients and their families to help create a positive attitude for recovery
- Conduct exercise programs and give heat and massage treatments
- Conduct physical therapy research
- Instruct physical therapy specialists in methods and techniques of physical exercise
- Plan and help develop rehabilitation facilities containing exercise machines, whirlpools, and other equipment

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Ability to express ideas clearly and concisely
- Interest in developing detailed plans and treatments
- Preference for working closely with people

Physical Demands

Physical therapists may have to lift and support patients during exercise and treatment.

Special Requirements

A 4-year college degree in physical therapy, completion of a physical therapy internship program, and a state license to practice physical therapy are required to enter this occupation.

Work Environment

Physical therapists work in hospitals, clinics, and other medical facilities.

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian physical therapists work in hospitals, rehabilitation centers, and nursing homes. They perform duties similar to those performed by military physical therapists. Civilian physical therapists often specialize in treating a particular type of patient, such as children, the severely disabled, or the elderly.

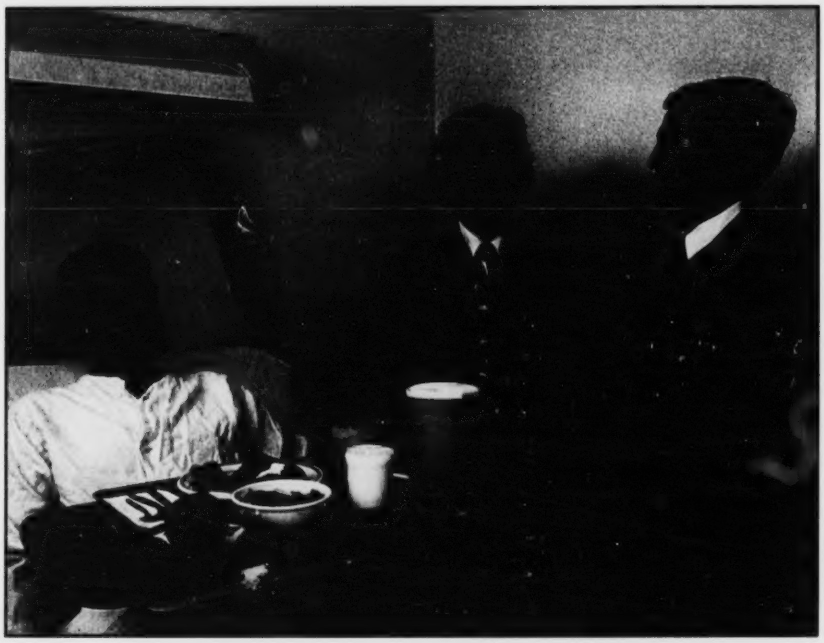
Opportunities

The services have about 450 physical therapists. On average, they need 30 new therapists each year. Physical therapists may advance to senior management positions in military health care administration.

PHYSICIAN ASSISTANTS

Army
Navy
Air Force
Coast Guard

Physician assistants provide routine health care for patients, freeing physicians to concentrate on more serious health problems. Physician assistants examine, diagnose, and treat patients under the supervision of medical doctors.



What They Do

Physician assistants in the military perform some or all of the following duties:

- Record medical histories, examine patients, and make initial diagnoses
- Treat common illnesses or injuries, calling in supervising physicians for serious health problems
- Perform routine physical examinations and collect specimens for laboratory tests
- Order laboratory studies, such as blood tests, urinalysis, and X-rays
- Provide information to patients about diet, family planning, use of drugs, and the effect of treatments
- Provide emergency care in situations where doctors are not available

Special Requirements

Graduation from an accredited training program for physician assistants that is recognized by the services is normally required to enter this occupation. Depending upon the service, however, military job training may be available.

Work Environment

Physician assistants work in hospitals and clinics on land and aboard ships.

Training Provided

Job training, when available from the services, consists of about 40 weeks of classroom instruction, including practice in providing patient health care. Course content typically includes:

- Fundamental medical care procedures
- Principles of behavioral and dental science
- Health care administration techniques

Civilian Counterparts

Civilian physician assistants work in hospitals, clinics, doctor's offices, and nursing homes. They perform duties similar to those performed by military physician assistants.

Helpful Attributes

Helpful attributes include:

- Self-confidence and the ability to remain calm in stressful situations
- Patience with others, especially those in pain or stress
- Desire to help others
- Ability to express ideas clearly and concisely

Opportunities

The services have about 700 physician assistants. On average, they need 20 new physician assistants each year. After job training, physician assistants provide health care under close supervision. With experience, they work more independently, although they remain under the supervision of a doctor. In time, they may advance to management positions in the military health care field.

REGISTERED NURSES

Army
Navy
Air Force

Nurses are a key part of the staff at military hospitals and clinics. Registered nurses direct nursing teams and give patients individual care to help them recover from illness or injury. Turn to page 428 for more information about registered nurses.

What They Do

Registered nurses in the military perform some or all of the following duties:

- Help physicians treat patients
- Give injections of pain killers, antibiotics, and other medicines as prescribed by physicians
- Change bandages and dressings
- Assist physicians during surgery
- Provide life support treatment for patients needing emergency care
- Provide care for mental health patients
- Keep records of patients' condition
- Supervise practical nurses, nurse aides, and other support personnel

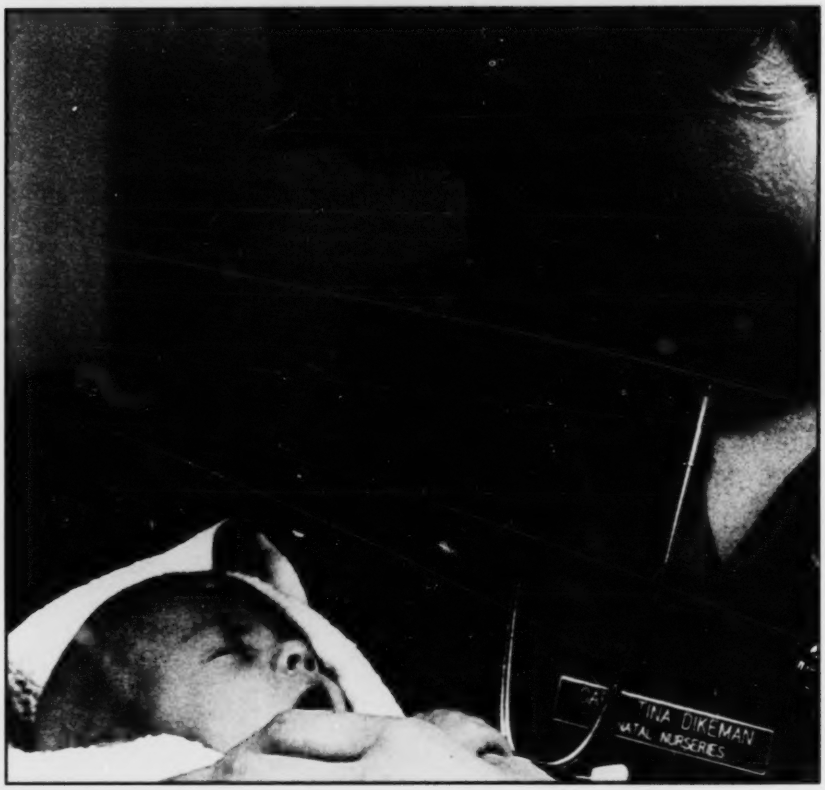
Helpful Attributes

Helpful attributes include:

- Desire to help others
- Ability to express ideas clearly and concisely
- Self-confidence and the ability to remain calm under pressure

Civilian Counterparts

Civilian registered nurses work in hospitals, clinics, and private medical facilities. They also work for public health agencies, nursing homes, and rehabilitation centers. Civilian registered nurses perform duties similar to those performed in the military. They often specialize and may be known as public health nurses, nurse practitioners, or general duty nurses.



Special Requirements

Graduation from an accredited school of nursing and a license to practice nursing are required to enter this occupation.

Training Provided

Job training consists of 14 to 27 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Practices and principles of military nursing
- Care of emotionally disturbed patients
- Health care for children
- Nursing techniques
- Anesthesia, respiratory therapy, and cardiopulmonary resuscitation

Work Environment

Registered nurses work in hospitals and clinics. Some work in sick bays aboard ships or in mobile field hospitals. Others work in airplanes that transfer patients to medical centers.

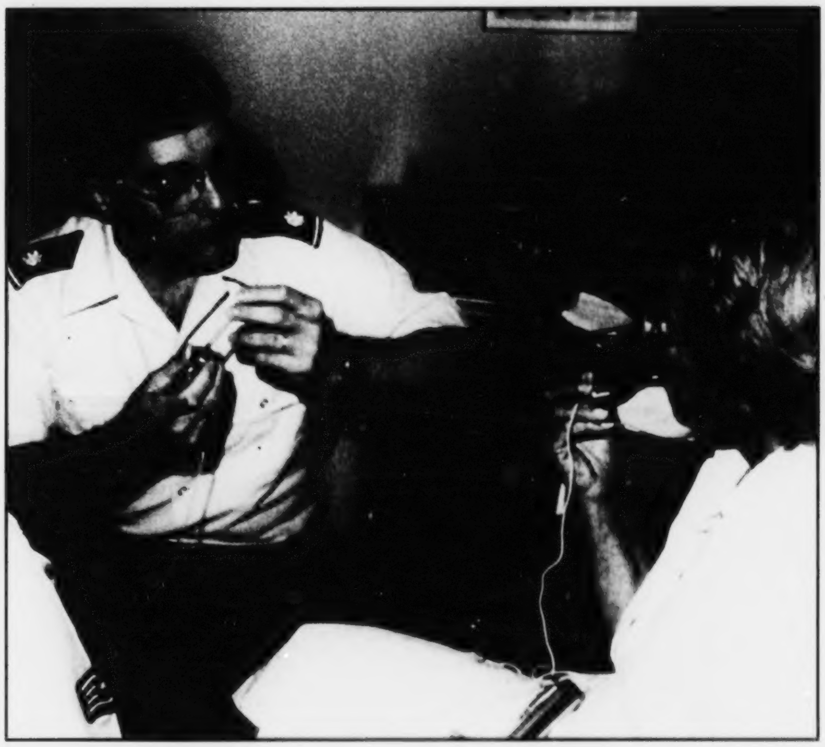
Opportunities

The services have about 9,800 registered nurses. On average, they need 1,000 new registered nurses each year. Depending on the prior experience that nurses bring with them to the military, their job assignments may vary. After job training, inexperienced nurses work under close supervision. Experienced nurses normally work under less supervision. In time, nurses may become nurse supervisors. Eventually, they may become directors of nursing in hospitals or advance to senior health service management positions.

SPEECH THERAPISTS

Army
Navy
Air Force

Speech therapists work as part of military medical teams. Speech therapists evaluate and treat patients with hearing and speech problems.



What They Do

Speech therapists in the military perform some or all of the following duties:

- Talk with patients to discuss hearing and speaking problems and possible causes and treatment
- Identify speaking and language problems
- Examine the ears, including the entire auditory (hearing) system
- Evaluate examination and test data to determine the type and amount of hearing loss
- Treat hearing problems using hearing aids and other treatments
- Assist patients in selecting and using hearing aids
- Conduct programs to help patients improve their speaking skills
- Research new techniques for treating hearing and speaking problems

Special Requirements

A master's degree in either audiology or speech therapy is required to enter this occupation depending on the occupational specialty.

Training Provided

No initial job training is provided to officers in this occupational group.

Helpful Attributes

Helpful attributes include:

- Desire to help others
- Interest in scientific work
- Patience to work with people whose injuries heal slowly

Work Environment

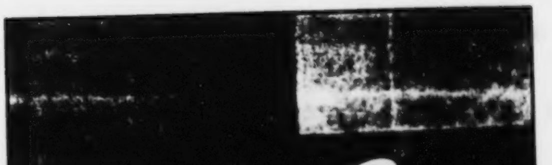
Speech therapists work in therapy labs, clinics, and medical centers.

Civilian Counterparts

Civilian speech therapists work in hospitals, clinics, schools, and research centers. They perform duties similar to those performed by military speech therapists. Depending on their specialty, civilian speech therapists may also be called audiologists or speech pathologists.

Opportunities

The services have about 100 speech therapists. On average, they need 10 new therapists each year. After displaying leadership abilities, speech therapists may advance to senior management and command positions in the medical field.



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Engineering, Science, and Technical Occupations

- Aerospace Engineers
- Air Traffic Control Managers
- Chemists
- Civil Engineers
- Computer Systems Development Officers
- Computer Systems Engineers
- Electrical and Electronics Engineers
- Industrial Engineers
- Intelligence Officers
- Lawyers
- Life Scientists
- Marine Engineers
- Meteorologists
- Nuclear Engineers
- Oceanographers
- Operations Research Analysts and Mathematicians
- Physicists
- Space Operations Officers
- Surveying and Mapping Managers

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AEROSPACE ENGINEERS

Navy
Air Force
Marine Corps
Coast Guard

Although private companies build the military's aerospace equipment, military engineers are responsible for seeing that all equipment meets service needs. Aerospace engineers design and direct the development of military aircraft, missiles, and spacecraft.

What They Do

Aerospace engineers in the military perform some or all of the following duties:

- Plan and conduct research on aircraft guidance, propulsion, and weapons systems
- Study new designs for aircraft, missiles, and spacecraft
- Help select private companies to build military aircraft, missiles, and spacecraft
- Monitor production of aircraft, missiles, and spacecraft
- Decide what tests should be conducted of prototypes (full-scale test models)
- Conduct stress analysis and wind tunnel tests with aircraft and missile prototypes

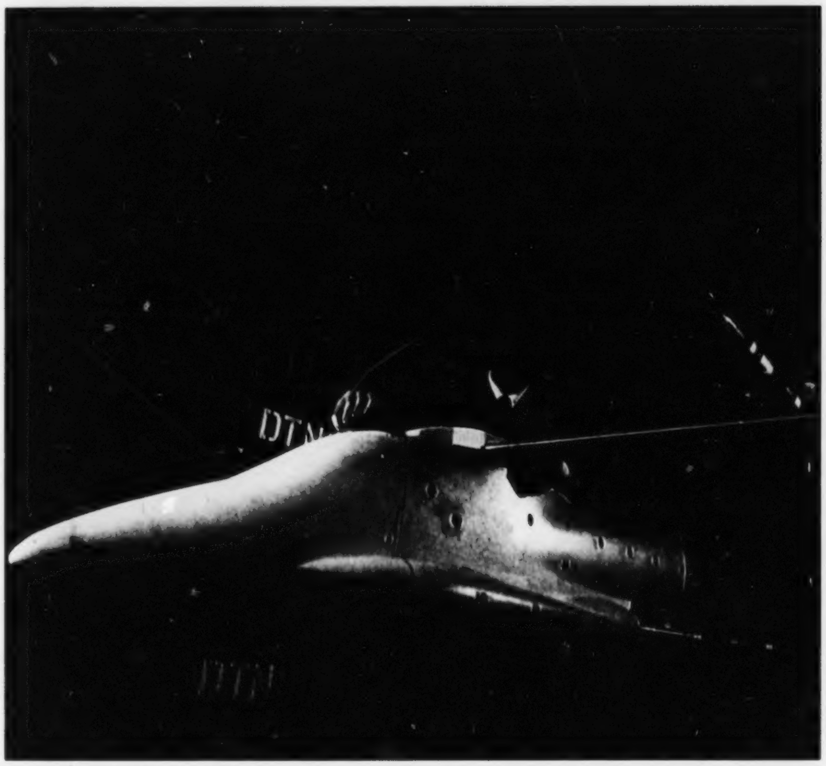
Special Requirements

A 4-year college degree in aeronautical, astronautical, or mechanical engineering is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in concepts and principles of engineering
- Interest in working with mathematical formulas
- Interest in planning and directing research projects



Work Environment

Aerospace engineers work in offices or laboratories.

Civilian Counterparts

Civilian aerospace engineers usually work in the aircraft manufacturing industry. Some work for the Department of Defense, the National Aeronautics and Space Administration (NASA), and other government agencies. As in the military, civilian aerospace engineers may specialize in one type of aerospace product, such as aircraft, missiles, or space vehicles. They may also specialize in engineering specialties such as product design, testing, or production research. Depending on their specialty, they may be called aeronautical engineers, aeronautical test engineers, or stress analysts.

Training Provided

No initial job training is provided to officers in this occupation.

Opportunities

The services have about 4,200 aerospace engineers. On average, they need 350 aerospace engineers each year. Newly commissioned aerospace engineers are usually assigned to engineering research and development units or laboratories. They work under the direction of experienced officers conducting research. With experience, they may serve as research and development managers or laboratory managers.

AIR TRAFFIC CONTROL MANAGERS

Army
Navy
Air Force
Marine Corps

Air traffic control centers often have several sections giving instructions to military aircraft. One section gives take-off and landing instructions. Another gives ground instructions. A third section tracks planes in flight. Air traffic control managers direct the operations of air traffic control centers.

What They Do

Air traffic control managers in the military perform some or all of the following duties:

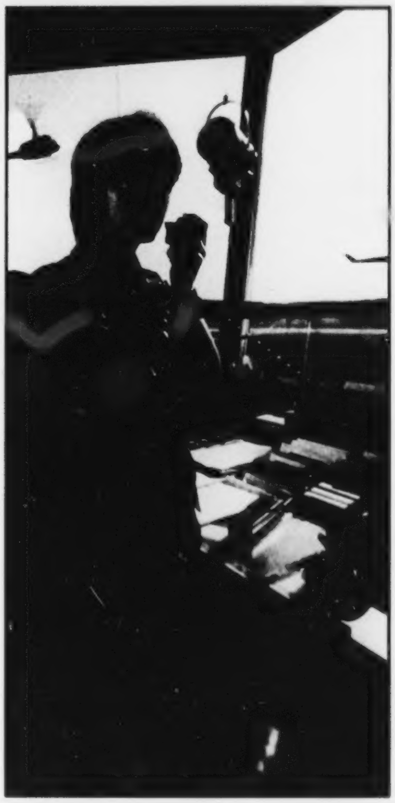
- Plan work schedules for air traffic controllers
- Evaluate job performance of controllers
- Manage air traffic control center operations to ensure safe and efficient flights
- Inspect control center facilities and equipment
- Direct tests of radar equipment and controller procedures
- Investigate and find solutions to problems in control center operations
- Control air traffic using radar and radios
- Direct training for air traffic controllers

Physical Demands

Air traffic control personnel must pass a demanding physical exam as required by the Federal Aviation Administration (FAA).

Work Environment

Air traffic control managers work in air traffic control towers and centers at airfields and aboard ships.



Helpful Attributes

Helpful fields of study include aeronautical engineering, computer science, and liberal arts. Helpful attributes include:

- Interest in work requiring accuracy and attention to detail
- Ability to remain calm in stressful situations
- Decisiveness
- Ability to manage in accordance with strict standards

Special Requirements

A 4-year college degree is normally required to enter this occupation. Certification by the FAA must usually be obtained during military training.

Training Provided

Job training consists of 6 to 11 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Air traffic control management
- Operational procedures for air traffic control
- Communications and radar procedures
- Aircraft recognition
- Take-off, landing, and ground control procedures

Civilian Counterparts

Civilian air traffic control managers work at commercial airports. They perform duties similar to those performed by military air traffic control managers.

Opportunities

The services have about 600 air traffic control managers. On average, they need 10 new air traffic control managers each year. After job training, managers are assigned to air traffic control centers at airfields or aboard ships, where they gain experience in air traffic control management. They may advance to senior management and command positions in the aviation field.

CHEMISTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military conducts research in chemistry and biochemistry to develop new materials for military equipment, better medicines, and defenses against biological and chemical agents. Chemists conduct and manage research in chemistry, chemical engineering, and biology.

What They Do

Chemists in the military perform some or all of the following duties:

- Conduct experiments in chemical synthesis, structure, and interactions
- Establish strength and durability standards for materials used to build aircraft, ships, and other equipment
- Test materials to identify defects and determine if they meet minimum military standards
- Conduct chemical research for military and medical uses, such as protecting people from radiation, chemicals, and biological agents
- Oversee research projects under contract to universities and industrial firms
- Prepare technical reports and make research recommendations

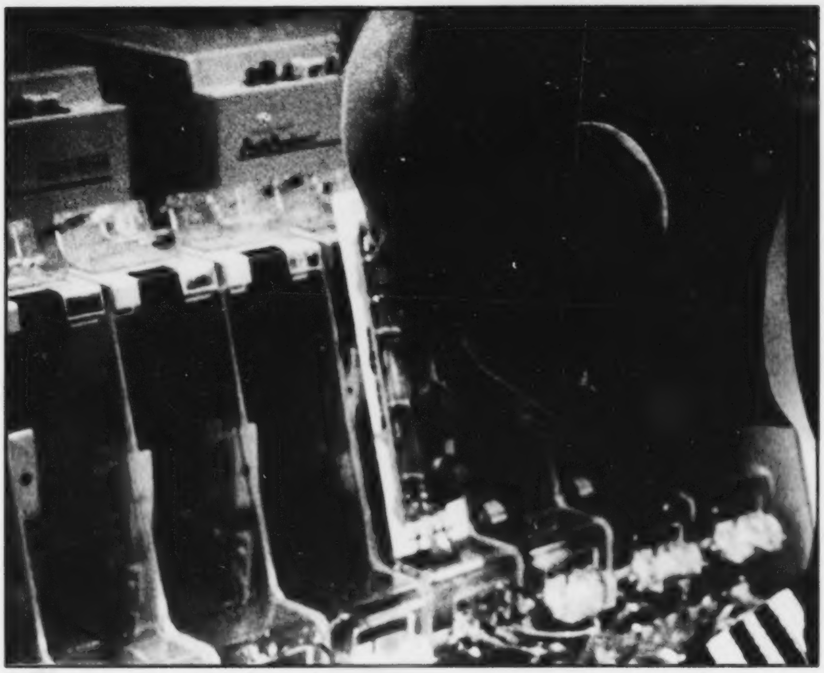
Training Provided

No initial job training is provided to officers in this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in working with mathematical formulas
- Interest in scientific study and research



Work Environment

Chemists work in laboratories and offices. Although they observe strict safety precautions, chemists may be exposed to hazardous substances.

Civilian Counterparts

Civilian chemists usually work in research and development for private industry, primarily in new product development. They also work for government agencies, colleges, and universities. Civilian chemists perform duties similar to those performed by chemists in the military. They sometimes specialize in areas such as organic chemistry, inorganic chemistry, physical chemistry, or biochemistry.

Special Requirements

A 4-year degree in chemistry, chemical engineering, or biology is required to enter this occupation.

Opportunities

The services have about 1,600 chemists. On average, they need 200 new chemists each year. Newly commissioned chemists are usually assigned to military laboratory facilities, where they perform duties in a chemistry specialty area. With experience, they may manage research and development units and advance to command positions.

CIVIL ENGINEERS

Army
Navy
Air Force
Coast Guard

Airfields, roads, bridges, buildings, power plants, docks, and water treatment plants on military bases around the world are continually being built, repaired, and improved. Civil engineers plan, design, and direct the construction of military facilities. Turn to page 414 for more information about civil engineers.

What They Do

Civil engineers in the military perform some or all of the following duties:

- Study the need for roads, airfields, buildings, and other facilities
- Direct surveys of construction areas
- Design construction projects
- Help select contractors to build facilities
- Check construction progress to see that it meets plans
- Plan and direct facility maintenance and modernization
- Plan temporary facilities for use in emergencies
- Keep master plans for military bases up to date

Special Requirements

A 4-year college degree in civil, architectural, sanitary, or environmental engineering, or another closely related field is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in engineering principles and concepts
- Interest in working with mathematical formulas

Training Provided

No initial job training is provided to officers in this occupation. However, advanced courses are offered to support medical service and environmental control building programs.

Civilian Counterparts

Civilian civil engineers work for engineering firms, construction companies, and government agencies. Some may work for public utilities, railroads, and manufacturing firms. Civilian civil engineers perform duties similar to those performed in the military; however, they often specialize in certain types of projects.

Work Environment

Civil engineers work in offices when designing projects or reviewing reports. They work outdoors when overseeing survey or construction activities.

Opportunities

The services have about 8,100 civil engineers. On average, they need 600 new civil engineers each year. Newly commissioned civil engineers usually assist senior engineering officers in planning and design. With experience, they may manage construction projects and, eventually, engineering offices. In time, they may advance to senior management or command positions in the engineering field.

COMPUTER SYSTEMS DEVELOPMENT OFFICERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Setting up large computer systems takes careful planning. Many decisions must be made about the input, output, and software needed to store information and solve problems. Computer systems development officers plan and design computer systems. They also design software used in computerized radar and communications equipment.

What They Do

Computer systems development officers in the military perform some or all of the following duties:

- Work with military units to determine their data processing needs
- Develop flow-chart diagrams or mathematical models of new computer systems
- Design and maintain computer software and data bases
- Design computer-to-computer linkages (interfaces)
- Write, test, and debug software
- Make systems secure from unofficial access
- Manage teams of systems analysts and programmers working on the designs of large systems

Special Requirements

A 4-year degree in computer science, mathematics, computer or industrial engineering, or a related field is required to enter this occupation.

Work Environment

Computer systems development officers usually work in offices.

Helpful Attributes

Helpful attributes include:

- Ability to work with abstract problems
- Interest in developing plans and procedures
- Interest in working with computers

Training Provided

Job training consists of 6 to 18 weeks of classroom instruction. Training length varies by specialty. Course content typically includes:

- Systems analysis techniques
- Principles of computer equipment
- Computer systems development and management

Civilian Counterparts

Civilian computer systems developers work for organizations that have large computer systems, including banks, insurance companies, hospitals, large retailers, research firms, manufacturers, and government agencies. They perform duties similar to those performed by computer systems development officers in the military. They may also be called systems analysts and software engineers.

Opportunities

The services have about 3,200 computer systems development officers. On average, they need 200 new computer systems development officers each year. After job training, computer systems development officers may perform systems analysis work as part of a team. They may also manage teams of systems analysts and programmers. With experience, they may advance to senior management and command positions.

COMPUTER SYSTEMS ENGINEERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Determining the types of computer equipment needed for new data processing systems is a complex task. Storage, memory, and processing needs must be estimated. Input, output, and communications needs must also be considered. Computer systems engineers determine the types and amounts of computer hardware needed for computer systems.

What They Do

Computer systems engineers in the military perform some or all of the following duties:

- Estimate memory and processing needs to determine the size of the computer needed
- Determine the number of peripherals needed, such as terminals, disk drives, and printers
- Determine equipment and software needs for telecommunications linkages with remote equipment
- Plan and oversee the installation of new equipment
- Set standards for and evaluate performance of new computer systems
- Monitor contracts for hardware or computer services
- Solve technical problems that arise in computer systems

Special Requirements

A 4-year college degree in computer science, computer engineering, or a related field is required to enter this occupation.

Work Environment

Computer systems engineers usually work in offices or at computer sites on military bases or aboard ships.

Helpful Attributes

Helpful attributes include:

- Interest in working with mathematical models and formulas
- Interest in technical work
- Interest in working with computers

Training Provided

Job training consists of 5 to 13 weeks of classroom instruction. Training length varies depending upon specialty. Course content typically includes:

- Organization and management of computer systems facilities
- Techniques for analyzing computer hardware and software performance
- Computer system life cycles

Civilian Counterparts

Civilian computer systems engineers work for computer and electronic communications systems manufacturers and suppliers, government agencies, public utilities, and firms that design and test computer systems. Some may be employed as private computer systems consultants. Civilian computer systems engineers perform duties similar to those performed in the military. They may also be called information processing engineers.

Opportunities

The services have about 1,100 computer systems engineers. On average, they need 70 new computer systems engineers each year. After job training, computer systems engineers are usually assigned to teleprocessing or data processing units where they work with other engineers, systems analysts, and computer programmers. With experience and demonstrated leadership, they may advance to management positions, such as communications director or data processing manager.

ELECTRICAL AND ELECTRONICS ENGINEERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Equipment such as radar, missile guidance systems, and communication equipment depends on advanced electronics. Electrical and electronics engineers design, develop and test electrical and electronic equipment. They also direct equipment installation and repair.

What They Do

Electrical and electronics engineers in the military perform some or all of the following duties:

- Direct research to improve and develop computer, navigation, and other electronic systems
- Direct equipment installation and repair
- Develop test standards and operating instructions for electrical and electronic systems
- Design and develop test instruments
- Test new or modified equipment to check its performance and reliability
- Review test data, report results, and recommend actions

Special Requirements

A 4-year college degree in electrical, electronic, or communications engineering is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in engineering concepts and principles
- Interest in planning and directing research projects
- Interest in working with mathematical formulas

Work Environment

Electrical and electronics engineers usually work in offices while planning research studies and designing electronic systems. They may work outdoors when overseeing the installation of new equipment.

Civilian Counterparts

Civilian electrical and electronics engineers work for manufacturers of electrical and electronic equipment. Many work for government agencies, public utilities, and engineering firms. Civilian electrical and electronics engineers perform duties similar to those performed in the military. However, they usually specialize in product areas, such as computers, communications, or aerospace systems. They may also be called electronics design engineers and electronics test engineers.

Training Provided

Initial job training is usually provided on the job. Classroom training is provided for some specialties in this occupation. Course content typically includes:

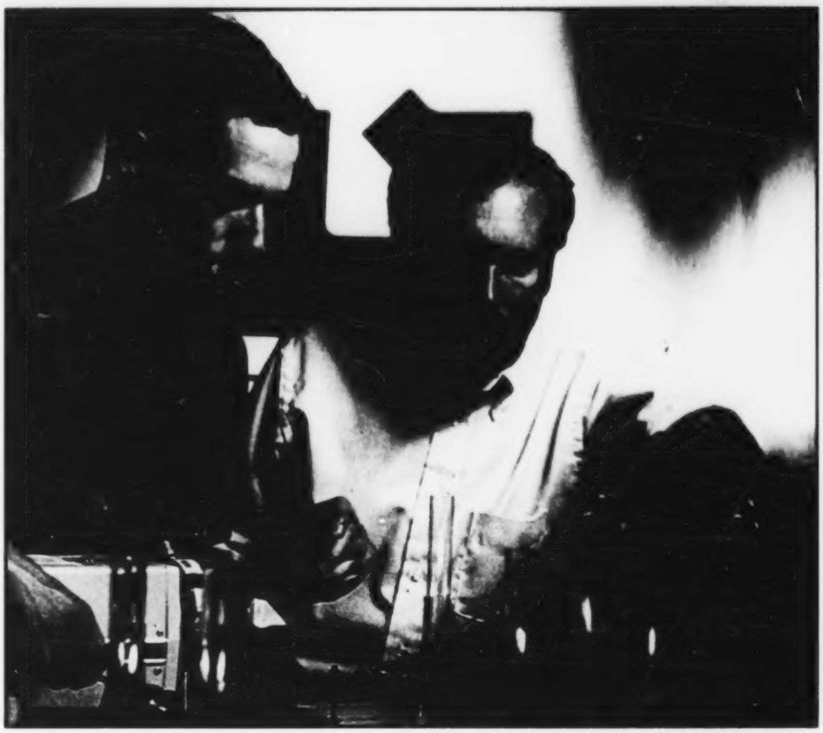
- Combat and tactical communications systems
- Telecommunications center systems
- Signal center site defense systems

Opportunities

The services have about 3,900 electrical and electronics engineers. On average, they need 200 new engineers each year. After job training, electrical and electronics engineers are usually assigned to engineering research and development units or to communications centers. Initially, they conduct studies and supervise research and development staff. With experience, they may advance to senior management positions, such as engineering staff officer, research and development manager, or communications center director.

INDUSTRIAL ENGINEERS

Army
Navy
Air Force
Marine Corps
Coast Guard



Because the military is so large, small savings in personnel or equipment costs can result in savings of millions of dollars. Industrial engineers design ways to improve how the military uses its people and equipment.

What They Do

Industrial engineers in the military perform some or all of the following duties:

- Study how workers and tasks are organized
- Measure work load and calculate how many people are needed to perform work tasks
- Study and improve the way work is done and equipment is used
- Develop and direct environmental health and safety programs
- Plan and oversee the purchase of equipment and services
- Plan and direct quality control and production control programs

Special Requirements

A 4-year college degree in industrial engineering, industrial management, or a related field is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in technical work
- Ability to plan and organize studies
- Interest in working with mathematical models and formulas
- Interest in working closely with people

Work Environment

Industrial engineers usually work in offices. They may work outdoors while performing field studies or overseeing the installation of equipment and systems.

Training Provided

Job training is offered for some specialties. Training length varies from 8 to 16 weeks of classroom instruction, depending on the specialty. Course content typically includes:

- Management standards, principles, and policies
- Problem analysis and decision making
- Production and purchasing methods

Civilian Counterparts

Civilian industrial engineers work primarily in manufacturing and consulting firms. They also work in other industries and businesses, including insurance companies, retail stores, banks, public utilities, and hospitals. Civilian industrial engineers perform duties similar to those performed in the military. Depending on the specialty, they may also be called production engineers, safety engineers, production planners, or quality control engineers.

Opportunities

The services have about 1,000 industrial engineers. On average, they need 50 new industrial engineers each year. After job training, industrial engineers are usually assigned to an engineering, management evaluation, or procurement unit. With experience, they may advance to command or policy-making positions in engineering, administration, or other fields.

INTELLIGENCE OFFICERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Information about the size, strength, location, and capabilities of enemy forces is essential to military operations and national defense. To gather information, the services rely on aerial photographs, human observation, and electronic monitoring using radar and super-sensitive radios. Intelligence officers gather technical intelligence needed for military planning. Turn to page 418 for more information about intelligence officers.

What They Do

Intelligence officers in the military perform some or all of the following duties:

- Direct sea, ground, and aerial surveillance
- Prepare plans to intercept foreign communications transmissions
- Direct the analysis of aerial photos and other intelligence data
- Oversee the writing of intelligence reports
- Brief commanders on intelligence findings
- Help plan military missions
- Direct the use of computer systems to store and process intelligence data
- Gather and analyze technical intelligence

Helpful Attributes

Helpful fields of study include cryptology, computer science, mathematics, and engineering. Helpful attributes include:

- Interest in solving problems
- Interest in collecting and analyzing data
- Ability to organize and manage activities
- Ability to work with abstract problems

Training Provided

Job training consists of 23 to 26 weeks of classroom instruction. Course content typically includes:

- Air, ground, and sea intelligence operations
- Photograph interpretation and evaluation
- Use of radar and electronic surveillance equipment
- Reconnaissance equipment and weapons systems

Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian intelligence officers generally work in federal agencies, such as the Central Intelligence Agency (CIA) and Federal Bureau of Investigation (FBI). They perform duties similar to those performed by military intelligence officers.

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Work Environment

Intelligence officers work in offices on land and aboard ships. They may work in the field on maneuvers and military exercises.

Physical Demands

Normal color vision is required to work with map overlays and color photos.

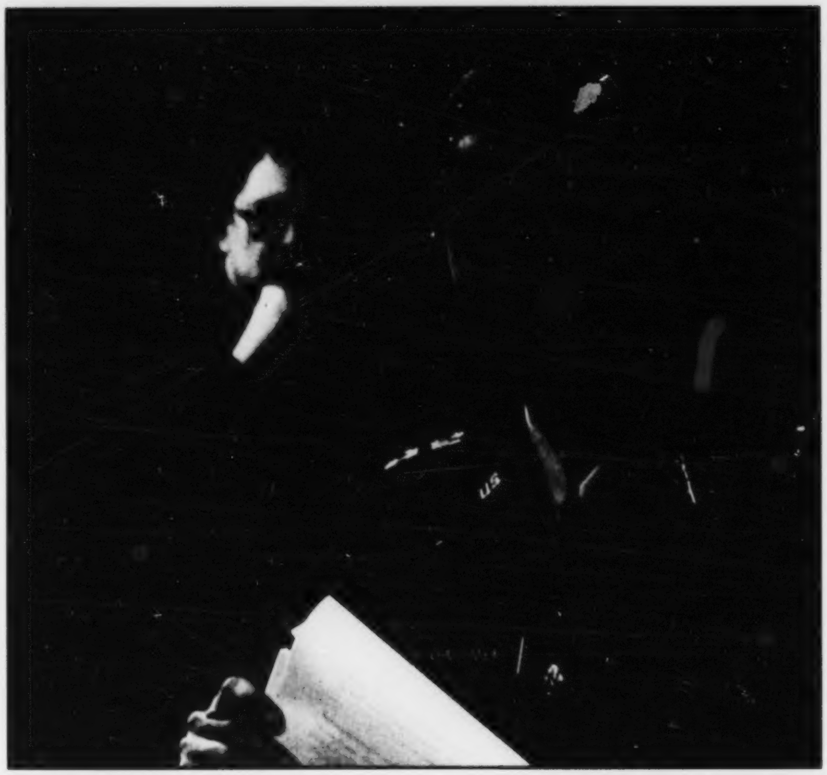
Opportunities

The services have about 10,700 intelligence officers. On average, they need 500 new intelligence officers each year. After job training, intelligence officers are assigned to intelligence units, military operations sections, or command posts. With experience, they may become commanders of intelligence units or directors of information gathering sections.

LAWYERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military has its own system of laws and courts. Lawyers administer activities within the military judicial system. They also perform legal research, prosecute and defend court cases, and preside over military courts. They provide legal services for military personnel and represent the services in civil and international legal matters. Turn to page 420 for more information about lawyers.



What They Do

Lawyers in the military perform some or all of the following duties:

- Give legal advice about government real estate, commercial contracts, patents, and trademarks
- Prepare pretrial advice for clients in court-martial cases
- Act as prosecuting attorney, defense attorney, or judge in court cases
- Prepare legal documents, such as wills and powers of attorney
- Interpret laws, directives, regulations, and court decisions
- Preside over court cases and make judgments based on the Uniform Code of Military Justice
- Help train new lawyers

Special Requirements

A degree in law is required to enter this occupation. In addition, most specialties require a membership to the bar in either federal court or the highest court of a state.

Helpful Attributes

Helpful attributes include:

- Interest in working with and researching legal concepts
- Ability to write clearly and concisely
- Ability to speak effectively in public
- Sensitivity to the needs of others

Work Environment

Lawyers work in legal offices and courtrooms on land and aboard ships.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Military trial procedures
- Application of the Uniform Code of Military Justice
- Methods of obtaining evidence
- Court-martial advocacy techniques

Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian lawyers work in private practice and for law firms, government, corporations, and nonprofit groups. They perform duties similar to those performed by military lawyers. Civilian lawyers, however, usually specialize in a particular field. There are several fields of civilian law, such as divorce, trade, and antitrust that military lawyers do not practice.

Opportunities

The services have about 4,200 lawyers. On average, they need 350 new lawyers each year. With experience, lawyers may be appointed military judges. In time, lawyers may advance to senior management positions in the legal field.

LIFE SCIENTISTS

Army
Navy
Air Force

The military conducts studies of human and animal diseases to understand their causes and to find treatments. Harmful pests and bacteria are studied to find ways to protect people and food against illness or infection. Life scientists study the biology and chemistry of living organisms.

What They Do

Life scientists in the military perform some or all of the following duties:

- Study bacteria and parasites to determine how they invade and affect humans or animals
- Study the effects of drugs, chemicals, and gases on living organisms
- Study ways of protecting humans through immunization from disease
- Direct blood banks and study blood chemistry
- Study the effects of aerospace flight, temperature, and movement on human physiology
- Study food storage and handling methods
- Study ways of keeping bases and ships free from pests
- Conduct experiments and write technical reports

Special Requirements

A 4-year college degree is normally required to enter this occupation. Some specialties require a master's degree.

Helpful Attributes

Helpful fields of study include biochemistry, biology, microbiology, and pharmacology. Helpful attributes include:

- Interest in scientific work
- Ability to express ideas clearly and concisely
- Interest in mathematics, chemistry, and biology

Work Environment

Life scientists work in medical, clinical, and research laboratories. They may work outdoors while conducting field work on land or aboard ships.

Training Provided

No initial job training is provided to officers in this occupation. However, advanced courses are available in some specialties.

Civilian Counterparts

Civilian life scientists work for universities, government agencies, medical laboratories, blood banks, pharmaceutical firms, and chemical companies. They perform duties similar to those performed by military life scientists. Depending on their specialty, civilian life scientists may be called biochemists, biologists, entomologists, immunologists, medical technologists, pharmacologists, physiologists, or toxicologists.

Opportunities

The services have about 900 life scientists. On average, they need 60 new life scientists each year. Newly commissioned life scientists are normally assigned to a laboratory, where they conduct research under the direction of more experienced scientists. In time, life scientists may manage their own research projects and direct other officers. Eventually, they may become directors of research laboratories or hold other senior management positions in the health research field.

MARINE ENGINEERS

Navy
Coast Guard

Ships and submarines must be designed for speed, strength, stability, and safety. Improvements in ship equipment, hull design, and deck layout can improve operations. Marine engineers design ships, submarines, and other watercraft for military use. They also oversee the construction and repair of ships and marine equipment.

What They Do

Marine engineers in the military perform some or all of the following duties:

- Study new ways of designing and building ship hulls
- Develop and test shipboard combat and salvage equipment
- Oversee the construction, maintenance, and repair of ship hulls and equipment
- Manage research programs to solve naval engineering problems
- Oversee the installation, operation, and repair of marine equipment and systems
- Evaluate marine research data and prepare technical reports

Special Requirements

A 4-year college degree in marine engineering is required to enter this occupation.

Helpful Attributes

Helpful attributes include:

- Interest in technical work
- Ability to plan and organize research projects
- Interest in ships and shipbuilding

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian marine engineers work in the shipbuilding industry. They also work for government agencies and ship machinery manufacturers. Civilian marine engineers perform duties similar to those performed in the military. They may also be called marine equipment research engineers, marine architects, marine equipment design engineers, marine surveyors, and port engineers.

Work Environment

Marine engineers do much of their work outdoors at shipyards while overseeing shipbuilding and repair activities. They work in offices while directing vessel design and development activities.

Opportunities

The services have about 300 marine engineers. On average, they need 10 new marine engineers each year. Newly commissioned marine engineers may be assigned to engineering or marine research and development laboratories. They may also be assigned to work in shipyards with vessel maintenance and repair units. With experience, marine engineers may advance to senior engineering management and command positions.

METEOROLOGISTS

Army
Navy
Air Force
Marine Corps

Meteorology is the study of the weather and weather forecasting. Military operations such as troop movements, airplane flights, missile launches, and ship movements rely on accurate weather information. Meteorologists study weather conditions and prepare current and long-range weather forecasts. Turn to page 422 for more information about meteorologists.

What They Do

Meteorologists in the military perform some or all of the following duties:

- Direct personnel who collect weather data
- Observe weather conditions from airplanes
- Interpret weather data received from satellites and weather balloons
- Prepare short-range and long-range weather forecasts
- Relay forecast updates and violent weather warnings to military and civilian authorities
- Train staff in data collection and interpretation

Physical Demands

Meteorology specialties involving air observation require applicants to pass a demanding flight physical exam.

Helpful Attributes

Helpful attributes include:

- Interest in scientific work
- Interest in collecting and analyzing data
- Interest in working with mathematical formulas
- Interest in planning and directing the work of others

Special Requirements

A 4-year college degree, with course work in meteorology, is usually required to enter this occupation.

Training Provided

Job training consists of 6 to 15 weeks of classroom instruction. Course content typically includes:

- Identification of common weather patterns
- Methods of analyzing weather conditions
- Use of radar and satellite systems for weather data collection
- Use of computers for compiling, analyzing, and plotting weather data
- Techniques and procedures of forecasting

Work Environment

Meteorologists usually work in weather stations or operations centers where weather information can be collected, analyzed, and plotted using computers. Sometimes they work outdoors while making weather observations.

Civilian Counterparts

Civilian meteorologists work for government agencies, radio and television stations, and airlines. They perform duties similar to those performed by military meteorologists.

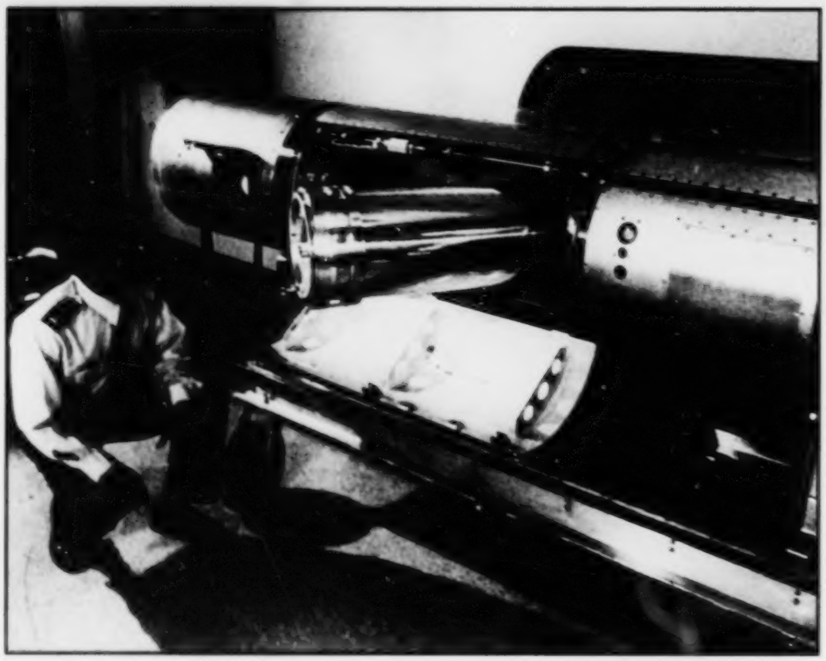
Opportunities

The services have about 1,500 meteorologists. On average, they need 60 new meteorologists each year. After job training, meteorologists are assigned to land-based or shipboard weather stations. With experience, they may advance to senior management and command positions.

NUCLEAR ENGINEERS

Army
Navy
Air Force
Marine Corps

The military has been a pioneer in the use of nuclear energy. The military uses nuclear energy for power plants, strategic weapons, and defense systems. Nuclear engineers direct research and development projects to improve military uses of nuclear energy. They also direct nuclear power plant operations. Turn to page 424 for more information about nuclear engineers.



What They Do

Nuclear engineers in the military perform some or all of the following duties:

- Direct projects to improve nuclear power plants in ships and submarines
- Direct research on the uses and effects of nuclear weapons
- Develop safety procedures for handling nuclear weapons
- Assist high-level officials in creating policies for developing and using nuclear technology
- Direct operations and maintenance of nuclear power plants

Special Requirements

A 4-year college degree in physics, chemistry, or nuclear engineering is required to enter this occupation. Some specialties in this occupation require a master's degree.

Work Environment

Nuclear engineers work in offices, research laboratories, and power plant control centers, either on land or aboard nuclear-powered ships and submarines.

Helpful Attributes

Helpful attributes include:

- Interest in scientific and technical work
- Interest in planning and directing complex research projects
- Interest in working with mathematical formulas
- Interest in concepts and principles of engineering

Training Provided

No initial job training is provided to officers in this occupation. However, advanced training is available.

Civilian Counterparts

Civilian nuclear engineers work for firms that build and operate nuclear power plants and that develop and manufacture nuclear weapons. Many also work for public utilities, government agencies, and colleges and universities. Civilian nuclear engineers perform duties similar to those performed in the military.

Opportunities

The services have about 350 nuclear engineers. On average, they need 20 new nuclear engineers each year. Newly commissioned nuclear engineers are usually assigned to nuclear research laboratories, nuclear power plants (on shore or aboard ships), or other defense facilities. With experience, they may advance to senior management or command positions.

OCEANOGRAPHERS

Navy
Coast Guard

The military needs navigational charts and maps to safely travel the oceans. Accurate oceanographic and weather forecasts are also needed to plan military operations. Oceanographers study ocean tides, currents, weather, and the physical features of the ocean floor.

What They Do

Oceanographers in the military perform some or all of the following duties:

- Direct personnel who collect oceanographic data
- Conduct research on the effects of water and atmosphere on military warning and weapon systems
- Direct the preparation of ocean, sea, and waterway charts, maps, and publications
- Oversee the preparation of oceanographic and weather forecasts
- Collect information on ice conditions in ocean shipping lanes
- Collect information about ocean currents for support of military operational planning
- Advise commanders about ocean and sea conditions to assist in search and rescue missions

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include oceanography, geology, marine engineering, and hydrology. Helpful attributes include:

- Preference for doing scientific work
- Interest in sailing and being at sea
- Interest in conducting research or analytical studies

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian oceanographers usually work for colleges and universities, where they are primarily involved in research. Some work for federal government agencies, such as the National Oceanic and Atmospheric Administration (NOAA) and for state and local governments that border on the ocean. Civilian oceanographers perform duties similar to those performed in the military.

Work Environment

Oceanographers work outdoors in all climates while collecting oceanographic information. They work in offices while preparing oceanographic publications and charts.

Opportunities

The services have about 200 oceanographers. On average, they need 10 new oceanographers each year. Newly commissioned oceanographers work in their specialty areas, usually with a senior officer. With experience, they work more independently. In time, they may advance to senior management or command positions.

OPERATIONS RESEARCH ANALYSTS & MATHEMATICIANS

Army
Navy
Air Force
Marine Corps
Coast Guard

Some parts of military operations are so large that planning for them must be done by computer. Setting up supply lines, for example, requires knowing which supplies are required, how much and when they are needed, and where they should be shipped. Operations research analysts and mathematicians study large and complex problems and solve them using operations research, systems analysis, and computer modeling techniques.

What They Do

Operations research analysts and mathematicians in the military perform some or all of the following duties:

- Develop research designs for analyzing and evaluating military operations and processes
- Solve supply, equipment, and other logistics problems using mathematical models, simulation, and analytical techniques
- Design new or improved operational and management procedures based on results of studies
- Develop and analyze war games to find ways to improve the nation's defenses
- Construct computer mathematical models to analyze research data on foreign military capabilities
- Prepare research reports
- Use computers to design or break cryptographic codes

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Work Environment

Operations research analysts and mathematicians work in offices on military bases or aboard ships.

Helpful Attributes

Helpful fields of study include engineering, statistics, mathematics, computer science, operations research, economics, and business or public administration. Helpful attributes include:

- Interest in planning and conducting analytical studies
- Preference for working with numbers and statistics
- Interest in solving problems
- Interest in work requiring accuracy and attention to detail

Training Provided

No initial job training is provided to officers in this occupation. However, advanced training is available in some specialties.

Civilian Counterparts

Civilian operations research analysts and mathematicians may work in management consulting firms, manufacturing plants, government agencies, and colleges or universities. Civilian operations research analysts and mathematicians perform duties similar to those performed in the military. They may also be called statisticians, mathematicians, or operations researchers.

Opportunities

The services have about 750 operations research analysts and mathematicians. On average, they need 30 new operations research analysts and mathematicians each year. Newly commissioned operations research analysts and mathematicians may be assigned to engineering, operational research, or management evaluation units. They usually work with other analysts on large projects. With experience, they may advance to senior management or command positions.

PHYSICISTS

Army
Navy
Air Force
Coast Guard

The goal of military research is to improve the technologies used for national defense. Through physics research, new materials for building ships, aircraft, and weapons are discovered. Physicists direct research and development projects on physical matter and energy.

What They Do

Physicists in.the military perform some or all of the following duties:

- Plan and conduct experiments in aerodynamics, optics, geophysics, biophysics, and astrophysics
- Conduct research to improve methods of radiation detection and protection
- Analyze strength, flexibility, weight, and other properties of metals, plastics, and other materials
- Conduct studies regarding the use of nuclear-powered engines
- Write technical reports on experiments performed
- Assist in research and development projects to improve radio and other communications equipment
- Oversee research projects under contract to universities and industrial firms
- Manage laboratories or field staff to conduct experiments

Special Requirements

A 4-year college degree in physics, chemistry, or nuclear engineering is required to enter this occupation. Some specialties require a master's degree.

Helpful Attributes

Helpful attributes include:

- Interest in scientific and technical work
- Interest in mathematics and physics
- Interest in conducting research and analytical studies

Work Environment

Physicists usually work in research and development laboratories.

Training Provided

No initial job training is provided to officers in this occupation.

Civilian Counterparts

Civilian physicists work primarily in research and development for private industry, colleges and universities, and government agencies. They perform duties similar to those performed by military physicists. Civilian physicists usually specialize in one area of physics, such as nuclear, astronomical, health, or medical physics.

Opportunities

The services have about 500 physicists. On average, they need 30 new physicists each year. Newly commissioned physicists work as part of research teams. With experience, they may lead research projects of their own. After demonstrating leadership abilities, they may advance to senior management positions in a variety of scientific fields.

SPACE OPERATIONS OFFICERS

Navy
Air Force

Orbiting satellites and other space vehicles are used for national security, communications, weather forecasting, and space exploration. Space operations officers manage space flight planning, training, mission control, and other activities involved in launching and recovering spacecraft. They may also command space flights or serve as crew members.

What They Do

Space operations officers in the military perform some or all of the following duties:

- Manage activities of the flight control facility, including mission planning and training
- Manage operation of guidance, navigation, and propulsion systems for ground and space vehicles
- Develop space flight simulation exercises to train astronauts
- Plan space stations
- Direct space center launch and recovery activities
- Command and pilot space shuttles
- Perform in-orbit tasks and experiments aboard spacecraft
- Monitor foreign space flights and missile launches

Physical Demands

Astronaut testing and training are very physically demanding. Officers must be in top physical shape to qualify for the astronaut shuttle program. Space operations officers must have normal color vision to read charts, graphics, and control panels.

Special Requirements

A 4-year college degree in science or engineering is required to enter the space operations field. A bachelor of science degree in engineering, mathematics, physical science, or life science is required to qualify as an astronaut.

Helpful Attributes

Helpful attributes include:

- Interest in scientific research
- Decisiveness
- Ability to work well as a member of a team
- Interest in space travel and desire to explore new frontiers

Civilian Counterparts

Most civilian space operations officers work for NASA in launch and mission control. They perform duties similar to those performed by military space operations officers. Some civilian space operations officers work for private corporations and firms that operate space satellites.

Work Environment

Launch and mission control space operations officers work in offices. Astronauts are required at times to work in a zero gravity environment in training as well as in space flight.

Training Provided

Job training for mission control officers consists of about 1 year of classroom instruction and practical experience. Course content typically includes:

- Evaluation of space transport systems
- Development of space mission plans
- Methods for conducting space flight training programs
- Development of space flight simulation exercises

Further training occurs on the job and through academic courses. Astronauts must complete the National Aeronautics and Space Administration (NASA) astronaut candidate training school. They also receive 1 year of practical training in space transport systems.

Opportunities

The services have about 1,300 space operations officers. On average, they need 90 new space operations officers each year. After job training, new space operations officers are assigned to space operations, launch and mission control centers, or research facilities. With experience and special training, they have the opportunity to work in various areas such as astronautics or space flight control. Eventually, they may manage a space and ballistic missile warning facility, a satellite command center, a space launch system, a space systems analysis facility, or a manned space flight. Although Army and Marine Corps officers may become astronauts and hold other positions in space operations, at present only the Navy and Air Force have defined career programs in this area.

SURVEYING AND MAPPING MANAGERS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military conducts land surveys to construct roads, airfields, and bridges. Land measurements are also needed to make maps and charts of unknown areas. Surveying and mapping managers plan and direct surveying and mapmaking operations.

What They Do

Surveying and mapping managers in the military perform some or all of the following duties:

- Plan surveys and aerial photography missions
- Direct the activities of survey teams
- Direct the calculation of latitude and longitude, slope, elevation, and other features of the land
- Direct mapmaking operations
- Advise commanders about distance and location during military operations

Special Requirements

A 4-year college degree in photographic science, cartography, photogrammetry, or a related field is required to enter this occupation.

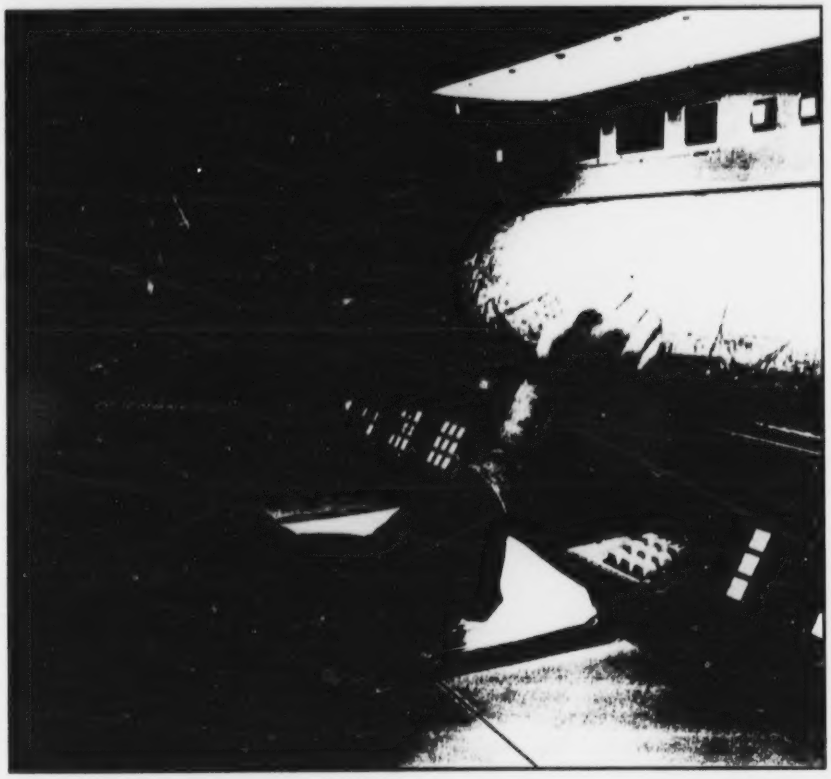
Helpful Attributes

Helpful attributes include:

- Interest in planning and directing the work of others
- Ability to visualize land features from maps and charts
- Interest in construction and engineering

Physical Demands

Normal color vision is required to read color maps and aerial photographs.



Work Environment

Surveying and mapping managers usually work in engineering offices. They may work outdoors when assisting survey teams or during military operations.

Training Provided

Job training consists of 10 to 13 weeks of classroom instruction. Course content typically includes:

- Mapmaking and charting techniques
- Survey methods
- Management of mapmaking programs

Civilian Counterparts

Civilian surveying and mapping managers usually work for engineering firms, where they manage construction project planning. They perform duties similar to those performed by military surveying and mapping managers. They may also be called land surveyors, cartographic supervisors, or photogrammetric engineers.

Opportunities

The services have about 750 surveying and mapping managers. On average, they need 30 new managers each year. After job training, surveying and mapping managers are usually assigned to engineering, surveying, or intelligence units or to mapmaking laboratories. Eventually, they may advance to senior management or command positions in the engineering field.

Service Occupations

- Law Enforcement Directors
- Security Officers [illegible]
- Special Agents [illegible]

BEST COPY AVAILABLE

LAW ENFORCEMENT DIRECTORS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military services have their own police forces to protect lives and property on military bases and to patrol our coastal waters. Law enforcement directors command military police units that enforce laws and investigate crimes.

What They Do

Law enforcement directors in the military perform some or all of the following duties:

- Direct the enforcement of military law
- Develop policies and programs to prevent crime and reduce traffic accidents
- Direct programs to patrol coastal waters and harbors
- Assign military police and detectives to patrols and investigations
- Manage investigations of crimes
- Supervise the arrest, custody, transfer, and release of offenders
- Review arrest reports, charges, and evidence to make sure they are complete and accurate
- Manage military correctional facilities

Work Environment

Law enforcement directors usually work in offices while planning and directing law enforcement activities. They may work outdoors while directing investigations, observing prisoners, and supervising the arrest of offenders.

Training Provided

Job training consists of 7 to 28 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Law enforcement administration
- Harbor security and safety
- Military law
- Security procedures
- Management of correctional facilities

Special Requirements

A 4-year college degree is normally required to enter this occupation. Some specialties require further education or prior experience in law enforcement.

Helpful Attributes

Helpful fields of study include business administration, corrections, psychology, sociology, and public administration. Helpful attributes include:

- Interest in law enforcement and crime prevention
- Interest in planning and directing the work of others
- Interest in working closely with others

Civilian Counterparts

Civilian law enforcement directors work for federal, state, and local police forces and private security companies. Some also operate their own security firms or become private detectives. Civilian law enforcement directors perform duties similar to those performed in the military. They may also be called police chiefs, chief inspectors, prison wardens, or chief deputy sheriffs.

Opportunities

The services have about 3,000 law enforcement directors. On average, they need 150 new law enforcement directors each year. After job training, law enforcement directors are assigned to command police, security, or investigative units. Depending on ability and experience, law enforcement directors may be assigned to direct one or more large law enforcement units.

SECURITY OFFICERS

Army
Navy
Air Force
Marine Corps
Coast Guard

Military bases contain weapons, supplies, equipment, and information vital to the national defense. Careful measures must be taken to guard against theft, destruction, and unauthorized access. Security officers plan and direct programs to protect military property, communications, and classified information.

What They Do

Security officers in the military perform some or all of the following duties:

- Plan for the security of military bases and office buildings
- Direct security procedures, such as issuing passes, fingerprinting, recordkeeping, and patrolling
- Direct training programs on how to maintain tight security
- Manage programs to classify and protect sensitive information
- Develop programs to secure communications systems from attack or unofficial use
- Inspect security systems
- Work with investigators to solve possible security problems

Special Requirements

A 4-year college degree is normally required to enter this occupation.

Helpful Attributes

Helpful fields of study include law enforcement and business or public administration. Helpful attributes include:

- Interest in activities involving careful planning
- Ability to express ideas clearly and concisely

Work Environment

Security officers usually work in offices. They may work outdoors when inspecting facilities and security systems or training security personnel who protect the base.

Training Provided

Training consists of 7 to 15 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Physical security planning
- Management of security problems
- Communications security
- Crime prevention

Civilian Counterparts

Civilian security officers work for industrial firms, government agencies, hotels, hospitals, colleges, and universities. They also work for private security management and consulting firms. Civilian security officers perform duties similar to those performed in the military. They may also be called security managers or plant protection superintendents.

Opportunities

The services have about 700 security officers. On average, the services need 20 new security officers each year. After job training, security officers help commanders plan security programs and direct security activities. After demonstrating leadership qualities, security officers may advance to senior management or command positions.

SPECIAL AGENTS

Army
Air Force
Marine Corps
Coast Guard

The services have their own internal security forces responsible for protecting military personnel and property against criminal or terrorist activities. Special agents manage the military's internal security forces. They plan and direct investigations to solve crimes and to discover any threats to military security.

What They Do

Special agents in the military perform some or all of the following duties:

- Plan investigations of suspected treason, sabotage, espionage, and other security violations
- Perform counterterrorism and counterintelligence investigations with other law enforcement agencies
- Assign detectives to conduct homicide, arson, burglary and other criminal investigations
- Direct the preparation of investigation reports and special studies
- Work with civilian and military agencies to arrange protection for U.S. and foreign officials
- Direct the collection, evaluation, and storage of evidence
- Help in ballistics, forgery, fingerprinting, and polygraph (lie detector) examinations

Physical Demands

Excellent vision, normal hearing, and clear speech are required to enter some specialties in this occupation.

Special Requirements

Experience or education in law enforcement is usually required to enter this occupation. Most specialties also require a 4-year college degree.

Helpful Attributes

Helpful fields of study include law enforcement, criminology, and business or public administration. Helpful attributes include:

- Interest in planning and organizing activities
- Ability to motivate and lead others
- Interest in law enforcement and crime prevention

Work Environment

Special agents in the military work mainly in offices while directing investigations. They may work outdoors while assisting detectives or conducting security studies.

Training Provided

Job training consists of 7 to 12 weeks of classroom instruction. Training length varies depending on specialty. Course content typically includes:

- Investigation procedures and reporting
- Collection and evaluation of evidence
- Counterintelligence and counterterrorism operations
- Techniques for interviewing witnesses and questioning suspects
- Criminal photography and fingerprinting
- Polygraph examination

Further training occurs in advanced courses.

Civilian Counterparts

Civilian special agents may work in federal, state, and local intelligence and law enforcement agencies. They perform duties similar to those performed in the military. They may specialize, however, in areas such as forensics, ballistics, forgery, fingerprinting, or polygraph examination.

Opportunities

The services have about 400 special agents. On average, they need 20 new special agents each year. After job training, special agents work as part of investigating teams gathering evidence and interviewing people. In time, they may lead investigations. Eventually, they may become commanders of law enforcement or security departments.

Transportation Occupations

- Airplane Navigators
- Airplane Pilots
- Helicopter Pilots
- Ship and Submarine Officers
- Ship Engineers

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AIRPLANE NAVIGATORS

Navy
Air Force
Marine Corps
Coast Guard

Pilots rely on the precision and skill of the navigator to keep the aircraft on course. Airplane navigators use radar, radio and other navigation equipment to determine position, direction of travel, intended course, and other information about their flights. Turn to page 410 for more information about airplane navigators.

What They Do

Airplane navigators in the military perform some or all of the following duties:

- Direct aircraft course using radar, sight, and other navigation methods
- Operate radios and other communication equipment to send and receive messages
- Locate other aircraft using radar equipment
- Operate bombardier systems during bombing runs
- Inspect and test navigation and weapons systems before flights
- Guide tankers and other airplanes during in-flight refueling operations
- Provide pilots with instrument readings, fuel usage, and other flight information

Physical Demands

Airplane navigators, like pilots, have a physically and mentally demanding job. Navigators are required to have excellent vision and must be in top physical shape.

Special Requirements

A 4-year college degree is required to enter this occupation. Although there are women airplane navigators, some specialties are open only to men.

Work Environment

Airplane navigators perform their work in aircraft. They may be stationed at airbases or aboard aircraft carriers anywhere around the world.

Training Provided

Job training consists of 6 to 12 months of classroom instruction. Course content typically includes:

- Principles and methods of navigation
- Operation of communication, weapon, and radar systems
- Inspection and testing of navigation equipment and systems
- Combat and bombing navigation procedures and tactics

Practical experience in navigation is gained through training in aircraft simulators and through about 100 hours of actual flying time. Further training occurs on the job and through advanced courses.

Helpful Attributes

Helpful fields of study include cartography, geography, and surveying. Helpful attributes include:

- Ability to read maps and charts
- Interest in work requiring accuracy and attention to detail
- Ability to respond quickly to emergencies
- Strong desire to fly

Civilian Counterparts

Civilian airplane navigators work for passenger and cargo airlines. They perform many of the same duties as performed by military navigators.

Opportunities

The services have about 10,000 airplane navigators. On average, they need 100 new navigators each year. After job training, airplane navigators are assigned to flying sections for duty. They work as officer crewmembers on bombers, tankers, fighters, or other airplanes. In time, they may advance to senior management or command positions.

AIRPLANE PILOTS

Army
Navy
Air Force
Marine Corps
Coast Guard

The military operates one of the largest fleets of specialized airplanes in the world. Supersonic fighters and bombers fly combat missions. Large transports carry troops and equipment. Intelligence gathering airplanes take photographs from high altitudes. Military airplane pilots fly the thousands of jet and propeller airplanes operated by the services. Turn to page 412 for more information about airplane pilots.

What They Do

Airplane pilots in the military perform some or all of the following duties:

- Check weather reports to learn about flying conditions
- Develop flight plans showing air routes and schedules
- Contact air traffic controllers to obtain take-off and landing instructions
- Fly airplanes by controlling engines, rudders, elevators, and other controls
- Monitor gauges and dials located on cockpit control panels
- Perform combat maneuvers, take photographs, transport equipment, and patrol areas to carry out flight missions

Physical Demands

Airplane pilots must pass the most demanding physical test of any job in the military. To be accepted for pilot training, applicants must have 20/20 vision and be in top physical condition. They must have very good eye-hand coordination and have extremely quick reaction times to maneuver at high speeds.

Special Requirements

A 4-year college degree is normally required to enter this occupation. Although the military has many women pilots, specialties involving duty in combat airplanes are open only to men. Because all Marine Corps planes are combat planes, there are no women pilots in the Marines.

Work Environment

Airplane pilots may be stationed at airbases or aboard aircraft carriers anywhere in the world. They fly in all types of weather conditions. Military pilots take off and land on airport runways and aircraft carrier landing decks.

Training Provided

Pilot training is a 2-year program covering 1 year each in initial and advanced training. Initial training includes time spent in flight simulators, classroom training, officer training, and basic flight training. Course content typically includes:

- Aircraft aerodynamics
- Jet and propeller engine operation
- Operation of aircraft navigation systems
- Foul weather flying
- Federal Aviation Administration (FAA) regulations

This is among the most challenging training given by the services; not everyone who attempts this training can meet the strict requirements for completion. Advanced training begins when pilots successfully complete initial training and are awarded their "wings." Advanced training consists of instruction in flying a particular type of aircraft.

Helpful Attributes

Helpful fields of study include physics and aerospace, electrical, or mechanical engineering. Helpful attributes include:

- Strong desire to fly airplanes
- Self-confidence and ability to remain calm in stressful situations
- Determination to complete a very demanding training program

Civilian Counterparts

Civilian airplane pilots who work for passenger airlines and air cargo businesses are called commercial pilots. Other civilian pilots work as flight instructors at local airports, as crop dusters, or as pilots transporting business executives in company planes. Many commercial pilots began their career in the military.

Opportunities

The services have about 24,600 airplane pilots. On average, they need 400 new pilots each year. After initial and advanced training, most pilots are assigned to flying squadrons to fly the types of aircraft for which they were trained. In time, pilots train for different aircraft and missions. Eventually, they may advance to senior management or command positions.

HELICOPTER PILOTS

Army
Navy
Air Force
Marine Corps
Coast Guard

Helicopters can take off from and land on small areas. They can also hover in one spot in the air. The military uses these versatile aircraft to transport troops and cargo, perform search and rescue missions, and provide close combat support for ground troops. Helicopter pilots fly the many helicopters operated by the services.

What They Do

Helicopter pilots in the military perform some or all of the following duties:

- Prepare flight plans showing air routes and schedules
- Fly helicopters by controlling engines, flight controls and other systems
- Monitor gauges and dials located on cockpit control panels
- Perform combat maneuvers, spot and observe enemy positions, transport troops and equipment, and evacuate wounded troops
- Check weather reports to learn about flying conditions

Physical Demands

Helicopter pilots must pass the most demanding physical tests of any job in the military. To be accepted for pilot training, applicants must have excellent vision and be in top physical condition. They must have very good eye-hand-foot coordination and have quick reflexes.

Special Requirements

A 4-year college degree is normally required to enter this occupation. Some specialties in the Army do not require a 4-year college degree, but are only open to personnel who have been in the service for several years and who are selected for a special pilot training program. Although there are women helicopter pilots, some specialties are open only to men. The Marine Corps has no women helicopter pilots because all specialties involve duty in combat aircraft.

Helpful Attributes

Helpful fields of study include physics and aerospace, electrical, or mechanical engineering. Helpful attributes include:

- Strong desire to fly aircraft
- Determination to complete a very demanding training program
- Self-confidence and ability to remain calm under stress

Training Provided

Job training consists of 1 to 2 years of academic and flight instruction. Flight training consists of at least 80 hours of flying time. Training length varies depending on specialty. Course content typically includes:

- Principles of helicopter operation
- Principles of helicopter inspection
- Flying techniques and emergency procedures
- Combat skills and tactics

Work Environment

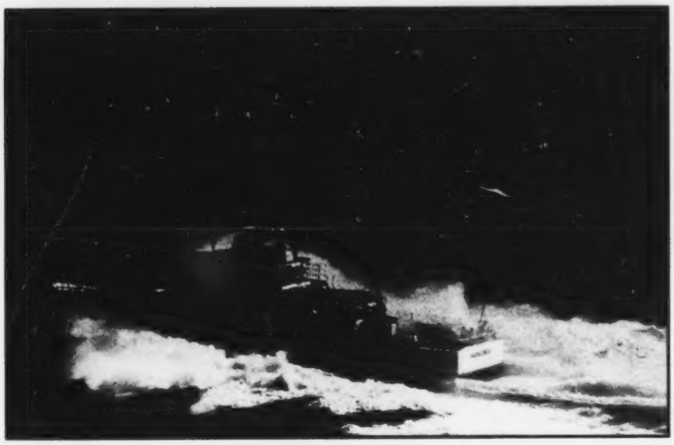
Helicopter pilots are stationed at military bases or aboard aircraft carriers around the world. They fly in all types of weather conditions. Helicopter pilots take off and land from airports, forward landing areas, and ship landing decks.

Civilian Counterparts

Civilian helicopter pilots work for police forces, local commuter services, and private businesses. They also work as crop dusters, fire fighters, traffic spotters, and helicopter flight instructors.

Opportunities

The military has about 6,100 helicopter pilots. On average, the services need 150 new pilots each year. After receiving their pilot rating, helicopter pilots are assigned to flying units. With experience, they may become group leaders or flight instructors. Helicopter pilots may advance to senior management and command positions.



SHIP AND SUBMARINE OFFICERS

Army
Navy
Coast Guard

Ships and submarines are organized by departments, such as engineering, communications, weapons, and supply. Ship and submarine officers work as a team to manage the various departments aboard their vessels. Turn to page 430 for more information about ship and submarine officers in the military.

What They Do

Ship and submarine officers in the military perform some or all of the following duties:

- Command vessels of all sizes at sea or in coastal waters
- Plan and manage the operating departments, under the captain's direction
- Plan and manage training exercises, such as target practice, aircraft operations, damage control drills, and searches for enemy submarines
- Evaluate subordinate personnel and recommend awards and promotions
- Direct search and rescue missions

Physical Demands

Good vision and normal color vision are required for reading color-coded charts and maps and, for submarine duty, for adjusting to red-light vision prior to surfacing at night.

Special Requirements

A 4-year college degree is normally required to enter this occupation. Although there are women ship officers, some assignments, such as submarine duty, are open only to men.

Work Environment

Ship and submarine officers work aboard their vessels. Engineering officers are subjected to hot, humid, and noisy environments. Submarine officers work in confined spaces for extended periods.

Training Provided

Job training consists of classroom instruction and practical experience in one of the following departments: air, weapons, operations, communications, engineering, deck, administration, or supply. Training length varies depending on specialty. Course content typically includes:

- Management and organization of ship or submarine operations
- Responsibilities of the individual departments
- Piloting and navigation of ships
- Interpretation of maritime laws and policies

Further training occurs on the job and through advanced courses.

Civilian Counterparts

Civilian ship officers work for private maritime passenger, freight, and tanker firms. With the exception of duties that are combat related, their duties are similar to those performed by military ship officers.

Helpful Attributes

Helpful fields of study include engineering, oceanography, mathematics, and computer science. Helpful attributes include:

- Ability to organize and direct the work of others
- Interest in sailing and being at sea
- Ability to motivate and lead others

Opportunities

The services have about 6,900 ship and submarine officers. On average, they need 200 new ship and submarine officers each year. After job training, officers are assigned to management positions in one of the ship's departments working under more experienced officers. With experience and demonstrated ability to lead, they assume greater responsibility. Depending on their specialty, ship and submarine officers gain experience in more than one department. Also, they are regularly reassigned to different ships or submarines where they meet and work with new people. Between sea tours they work and attend training at shore bases. Eventually, ship and submarine officers may be selected to command a vessel.

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SHIP ENGINEERS

Army
Navy
Coast Guard

Engines are a ship's main source of power for propulsion, heat, and electricity. Ship engines are massive; some are as large as the power plants that generate electricity for small cities. Ship engineers direct the engineering departments aboard ships and submarines. They are responsible for engine operations, maintenance, and repair. They are also responsible for shipboard heating and power generation.

What They Do

Ship engineers in the military perform some or all of the following duties:

- Direct engine room operations in nuclear or diesel-powered vessels
- Direct crews that inspect and maintain the electrical generators that supply power for lights, weapons, and equipment
- Direct crews that inspect and maintain the heating plants and air conditioning systems
- Direct crews that inspect and maintain ship transmission and propulsion systems
- Direct engine room repairs

Special Requirements

A 4-year college degree is normally required to enter this occupation. Nuclear specialties require a 4-year college degree in nuclear engineering.

Helpful Attributes

Helpful fields of study include civil, mechanical, and electrical engineering. Helpful attributes include:

- Interest in planning and directing the work of others
- Interest in engines and machines

Work Environment

Ship engineers work in engine rooms, where the noise levels and temperatures may be high.

Training Provided

Job training consists of 3 to 12 months of instruction. Training length varies depending on specialty; the time required for nuclear specialties is the longest. Course content typically includes:

- Inspection and maintenance of marine engines, electrical systems, and fuel systems
- Operation and maintenance of steam plants and related machinery

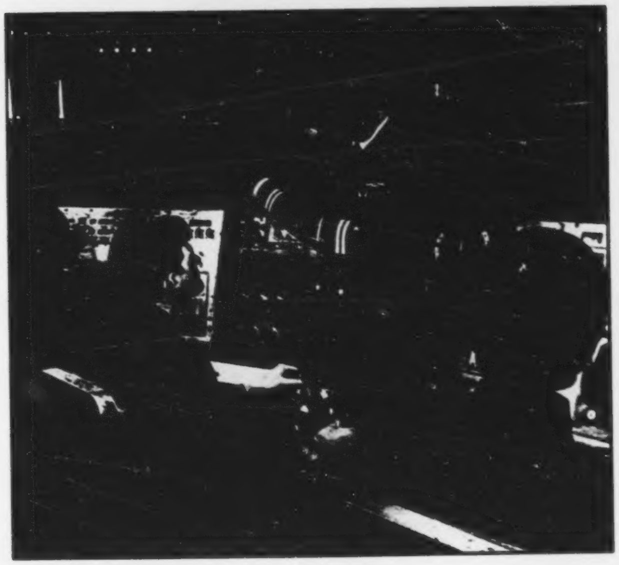
Further training occurs on the job and through advanced courses. Nuclear specialties involve extensive training in reactor operations.

Civilian Counterparts

Civilian ship engineers work for shipping lines, transport companies, and some government agencies. They perform duties similar to those performed by military ship engineers. Civilian ship engineers may also be called engineers or marine engineers.

Opportunities

The services have about 1,500 ship engineers. On average, they need 20 new ship engineers each year. After job training, ship engineers work as assistant engineers under the direction of a chief engineer. With experience, they may advance to become chief engineer in charge of an engineering department. Eventually, they may advance to senior management and command positions.



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Combat Specialty Occupations

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Artillery Officers

Infantry Officers

Missile System Officers

Special Operations Officers

Tank Officers

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ARTILLERY OFFICERS

Army
Navy
Marine Corps
Coast Guard

The military uses artillery to support infantry and tank units in combat and to protect land and sea forces from air attack. Artillery officers direct artillery crew members as they position, maintain, and fire guns, cannons, howitzers, and rockets at enemy positions and aircraft. They normally specialize by type of artillery.

What They Do

Artillery officers in the military perform some or all of the following duties:

- Direct training activities of artillery and gun crew members
- Direct fire control operations and firing procedures
- Direct naval gunnery operations
- Select location of artillery and coordinate their use with infantry and tank units
- Direct air defense missile system operations
- Direct maintenance of artillery fire control equipment

Physical Demands

Physical requirements vary depending upon the type of artillery unit to which the officer is assigned. In most instances, artillery officers must meet very demanding physical requirements. They must be able to perform for long periods of time without rest and to work under stress.

Special Requirements

A 4-year college degree is normally required to enter this occupation. Although there are women artillery officers, some specialties in this occupation are open only to men.

Helpful Attributes

Helpful fields of study include engineering, physics, and chemistry. Helpful attributes include:

- Ability to motivate and lead others
- Decisiveness
- Willingness to accept a challenge and face danger

Training Provided

Job training consists of 3 to 19 weeks of classroom instruction and field training under simulated combat conditions. Training length varies depending on specialty. Course content typically includes:

- Artillery tactics
- Ammunition handling procedures
- Fire direction control procedures
- Air defense artillery duties

Further training occurs on the job and through advanced courses.

Work Environment

Artillery officers live and work under the same conditions as the personnel they lead. Some artillery officers spend a lot of time in field training exercises, where they work, eat, and sleep outdoors and in tents. Others work and live aboard ships.

Civilian Counterparts

Although the job of artillery officer has no equivalent in civilian life, the leadership and administrative experiences it provides are similar to those used in many civilian management occupations.

Opportunities

The services have about 13,900 artillery officers. On average, they need 1,100 new artillery officers each year. After training, new artillery officers usually assist commanders in directing artillery units. After demonstrating leadership ability, they may advance to command positions.

INFANTRY OFFICERS

Army
Marine Corps

In peacetime, the infantry stays ready to defend the country anywhere in the world. In combat, the infantry is deployed to capture or destroy enemy forces on the ground and to repel enemy invasions. Infantry officers direct, train, and lead infantry units. Turn to page 416 for more information about infantry officers.

What They Do

Infantry officers in the military perform some or all of the following duties:

- Gather and evaluate intelligence on enemy strength and positions
- Develop offensive and defensive battle plans
- Coordinate plans with armor, artillery, and air support units
- Direct construction of bunkers, fortifications, and obstacles to support and camouflage infantry positions
- Direct the use of infantry weapons and equipment, such as machine guns, mortars, rocket launchers, and armored personnel carriers
- Develop and supervise infantry unit training
- Direct administrative activities

Physical Demands

Infantry officers must meet the same demanding physical requirements as the infantrymen they command. They must be in excellent physical condition to perform strenuous activities over long periods of time, sometimes without sleep or rest.

Special Requirements

A 4-year college degree is normally required to enter this occupation. This occupation is open only to men.

Work Environment

Because infantry officers must be prepared to lead their troops anywhere in the world that the infantry is needed, they work and train in all climates and weather conditions. During training exercises, as in real combat situations, infantry officers work, eat, and sleep outdoors and in tents. When not in the field, infantry officers perform administrative and management duties in offices.

Training Provided

Job training consists of 8 to 14 weeks of classroom instruction and field training under simulated combat conditions. Training length varies depending on specialty. Course content typically includes:

- Infantry leadership roles
- Infantry squad and platoon tactics
- Modern offensive and defensive combat techniques

Helpful Attributes

Helpful fields of study include engineering, history, physical education, and business or public administration. Helpful attributes include:

- Ability to motivate and lead others
- Willingness to accept a challenge and face danger
- Interest in land battle history and strategy

Civilian Counterparts

Although the job of infantry officer has no equivalent in civilian life, the leadership and administrative skills it provides are similar to those used in many civilian managerial occupations.

Opportunities

The services have about 12,900 infantry officers. On average, they need 1,000 new infantry officers each year. After job training, infantry officers are assigned to infantry units as platoon leaders. They direct training and tactical exercises for wargames. Advancement in the infantry is based on ability to lead. Infantry officers with proven ability to lead may assume command positions.

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MISSILE SYSTEM OFFICERS

Army
Navy
Air Force

Ballistic missiles are powerful weapons that travel thousands of miles to their targets. They are fired from underground silos, submarines, and land-based launchers. Missile system officers direct missile crews as they target, launch, test, and maintain ballistic missiles.

What They Do

Missile system officers in the military perform some or all of the following duties:

- Stand watch as members of missile launch crews
- Direct testing and inspection of missile systems
- Direct missile maintenance operations
- Direct early-warning launch training exercises
- Direct security operations at missile sites
- Direct the storage and handling of nuclear warheads
- Direct operation of fail-safe and code verification systems

Special Requirements

A 4-year college degree is normally required to enter this occupation. For some specialties, a master's degree in management is preferred.

Helpful Attributes

Helpful fields of study include engineering, physics, computer science, and business or public administration. Helpful attributes include:

- Ability to motivate and lead others
- Ability to remain calm in stressful situations
- Ability to learn and precisely follow complex procedures

Work Environment

Missile system officers work in underground launch command centers, in submarines, and in ground-level missile sites.

Training Provided

Job training consists of 12 to 19 weeks of classroom instruction and training on missile system simulations. Training length varies depending on specialty. Course content typically includes:

- Missile targeting
- Security and code authentication
- Launch operations
- Maintenance programs

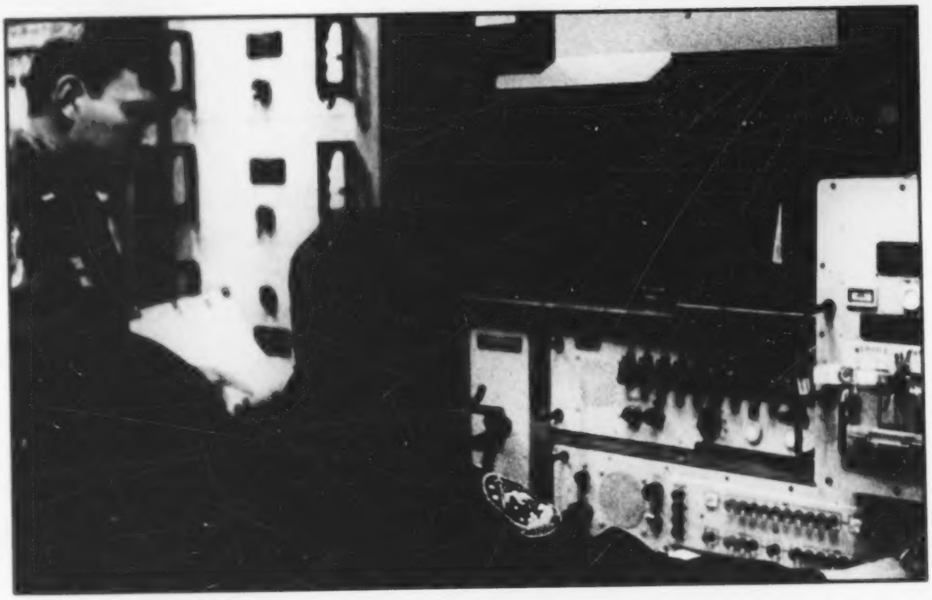
Further training occurs on the job and through advanced courses.

Civilian Counterparts

Although the job of missile system officer has no equivalent in civilian life, the leadership skills it provides are similar to those used in many civilian occupations.

Opportunities

The services have about 3,100 missile system officers. On average, they need 700 new officers each year. After job training, new missile system officers normally learn the details of missile operations by focusing on one aspect at a time under the direction of experienced officers. In time, they manage one or more divisions at a missile site, assuming more responsibility. Eventually they may advance to senior management and command positions in missile operations or other areas in their service.



SPECIAL OPERATIONS OFFICERS

Army
Navy
Air Force
Marine Corps

Each service has specially trained forces to perform rapid strike missions. These elite forces stay in a constant state of readiness to strike anywhere in the world on a moment's notice. Special operations officers lead special operations forces in offensive raids, demolitions, intelligence gathering, and search and rescue missions. Due to the wide variety of missions, special operations officers are trained swimmers, parachutists, and survival experts.

What They Do

Special operations officers in the military perform some or all of the following duties:

- Train personnel in parachute, scuba diving, and special combat techniques
- Plan missions and coordinate plans with other forces as needed
- Train personnel for special missions using simulated mission conditions
- Lead special forces teams in accomplishing mission objectives
- Direct and supervise administrative activities of special forces units

Physical Demands

Special operations officers must meet very demanding physical requirements. Good eyesight, night vision, and physical conditioning are required to reach mission objectives by parachute, over land, or under water. Good eye-hand coordination is required to detonate or deactivate explosives. In most instances, special operations officers are required to be qualified swimmers, parachutists, and endurance runners.

Special Requirements

A 4-year college degree is normally required to enter this occupation. Selection as a special operations officer is very competitive. This occupation is open only to men.

Helpful Attributes

Helpful fields of study include physical education, engineering, physical sciences, history, and business or public administration. Helpful attributes include:

- Ability to remain calm and decisive under stress
- Willingness to accept a challenge and face danger
- Willingness to stay in top physical condition
- Determination to complete a very demanding training program

Work Environment

Because special operations officers must be prepared to go anywhere in the world they are needed, they train and work in all climates, weather conditions, and settings. They may work in cold water and dive from submarines or small underwater craft. They may also be exposed to harsh temperatures, often without protection, during missions into enemy-controlled areas.

Training Provided

Job training consists of up to 20 weeks of formal classroom training and practical experience. Training length varies depending on specialty. Course content typically includes:

- Physical conditioning, scuba diving, swimming, and parachuting
- Mission planning techniques
- Handling and using explosives
- Reconnaissance techniques

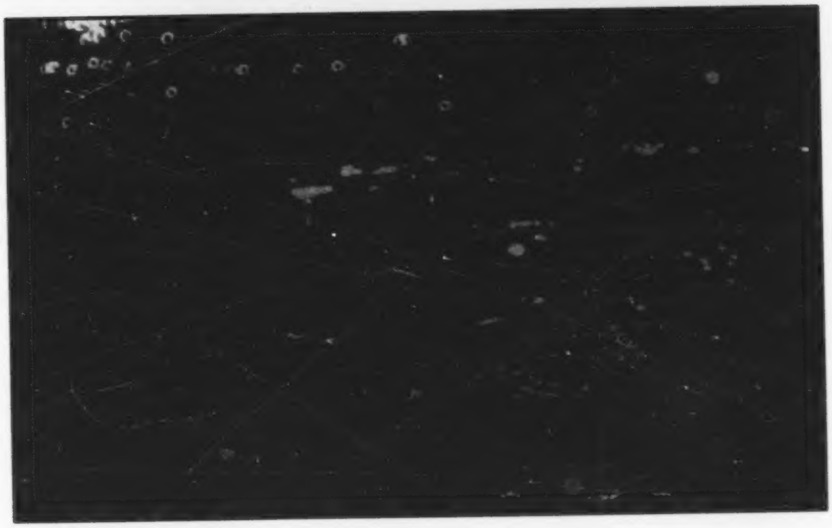
Additional training occurs on the job. Basic skills are kept sharp through planning and conducting exercises under simulated mission conditions.

Civilian Counterparts

Although the job of special operations officer has no equivalent in civilian life, the leadership and administrative skills it provides are similar to those used in many civilian management occupations, particularly law enforcement.

Opportunities

The services have about 1,900 special operations officers. On average they need 20 new special operations officers each year. After training, special operations officers usually assist commanders in directing special operations forces. After demonstrating leadership ability, they may assume command positions.



TANK OFFICERS

Army
Marine Corps

In peacetime, tank and armor units stay ready to defend the country anywhere in the world. In combat, they operate tanks, armored vehicles, and amphibious assault vehicles to engage and destroy the enemy. Tank officers lead tank and armor units. They normally specialize by type of tank unit, such as armor, cavalry, or amphibious assault.

What They Do

Tank officers in the military perform some or all of the following duties:

- Gather and evaluate intelligence or enemy strength and positions
- Formulate battle plans
- Coordinate actions with infantry, artillery, and air support units
- Plan and direct communications
- Direct operations of tanks, amphibious assault vehicles, and support equipment
- Plan and supervise tactical and technical training of a tank unit
- Direct unit administrative activities

Helpful Attributes

Helpful fields of study include engineering, geography, physical sciences, history, and business or public administration. Helpful attributes include:

- Ability to motivate and lead others
- Willingness to accept a challenge and face danger
- Decisiveness
- Interest in tanks and battlefield strategy

Work Environment

Tank officers work and train in all climates and weather conditions. To remain ready for combat, tank units must regularly train under simulated combat conditions. During these exercises, tank officers are on the move, working, eating, and sleeping outdoors and in tents. When not in training, tank officers perform administrative duties in offices.

Training Provided

Job training consists of 4 to 20 weeks of classroom and field training. Training length varies depending on specialty. Course content typically includes:

- Weapons and equipment maintenance
- Tank and armor operations, principles, and tactics
- Night maneuvers
- Role of the platoon leader

Further training occurs on the job and through specialized courses.

Physical Demands

Tank officers must meet the same demanding physical requirements as the troops they command. They must be physically fit and able to hold up under the stress of combat conditions.

Special Requirements

A 4-year college degree is normally required to enter this occupation. This occupation is open only to men.

Civilian Counterparts

Although the job of tank officer has no equivalent in civilian life, the leadership and administrative skills it provides are similar to those used in many civilian managerial occupations.

Opportunities

The services have about 6,300 tank officers. On average, they need 500 new tank officers each year. New tank officers are assigned to tank and armor units as platoon leaders. Advancement in armor is based on ability to lead. Tank officers with proven ability to lead may assume command positions.

MILITARY CAREER PATHS

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Introduction to Military Career Paths

The Military Career Paths section provides a general description of the military career development process. The Military Career Paths section is divided into two parts—enlisted career path information and officer career path information.

Enlisted personnel are the workers who carry out and maintain the day-to-day operations of the military. They work as computer operators, aircraft mechanics, plumbers, or firefighters. Enlisted personnel are usually high school graduates and are required to meet minimum physical and aptitude requirements before enlisting. The qualifications for becoming an enlisted service member are described in the General Information on Enlisted Occupations section of *Military Careers* (p. 11).

The enlisted part of Military Career Paths provides descriptions of 25 enlisted career paths found in the Military Occupations section. Each enlisted career path description includes valuable information such as duty assignment, related military occupations, advancement requirements, specializations, training provided, and typical career path. Also included in the career path description is a "career profile" summarizing the career progression of an actual service member. The enlisted career path descriptions are located on pages 356 to 405.

Officers are the professional leaders of the military and usually are college graduates. Officers perform duties similar to those of a corporate manager or executive. They develop plans, set objectives, and direct the efforts of other military personnel in meeting their objectives. Young men and women hoping to become officers must meet the minimum entrance requirements set by the services. The qualifications required for being commissioned as an officer are described in the General Information on Officer Occupations section of *Military Careers* (p. 209).

The officer part of Military Career Paths provides descriptions of 13 officer occupations found in the Military Occupations section. Each career path description contains information similar to that provided for enlisted careers. The officer career path descriptions are located on pages 410 to 435.

Also included in Military Career Paths are two exercises to help you use this section more effectively and plan for a career. To use Military Career Paths, begin by reading pages 348 and 349. You will learn how to read both the enlisted and officer career path descriptions.

How to Read the Career Path Descriptions

The purpose of the Military Career Paths section is to explain military career opportunities to students, counselors, and parents. It can be used to explore enlisted and officer careers in the Army, Navy, Air Force, Marine Corps, and Coast Guard. Military Career Paths describes the typical duties and assignments for a person advancing along the path of a military career. In total, 25 enlisted and 13 officer occupations are illustrated in the Military Career Paths section. Each career path description has standard sections as shown in the example below.

When reading any one of the 38 career path descriptions, remember that it is a summary of career paths in similar job specialties across two or more military services. Individual career paths may differ somewhat from the general descriptions in this book. If you are interested in learning more about a particular service or occupation you should contact a recruiter for details.

Career Title

The career title names the military occupation.

Profile

The "Profile" describes the actual duties and assignments of a military enlisted member or officer during his or her career. Because each individual career path is unique and spans many years, some assignments will not be typical or representative of current policy. However, the flavor and activities of a full career are accurately illustrated in the "Profile." The names in the profiles have been changed for privacy purposes.

Related Military Occupations

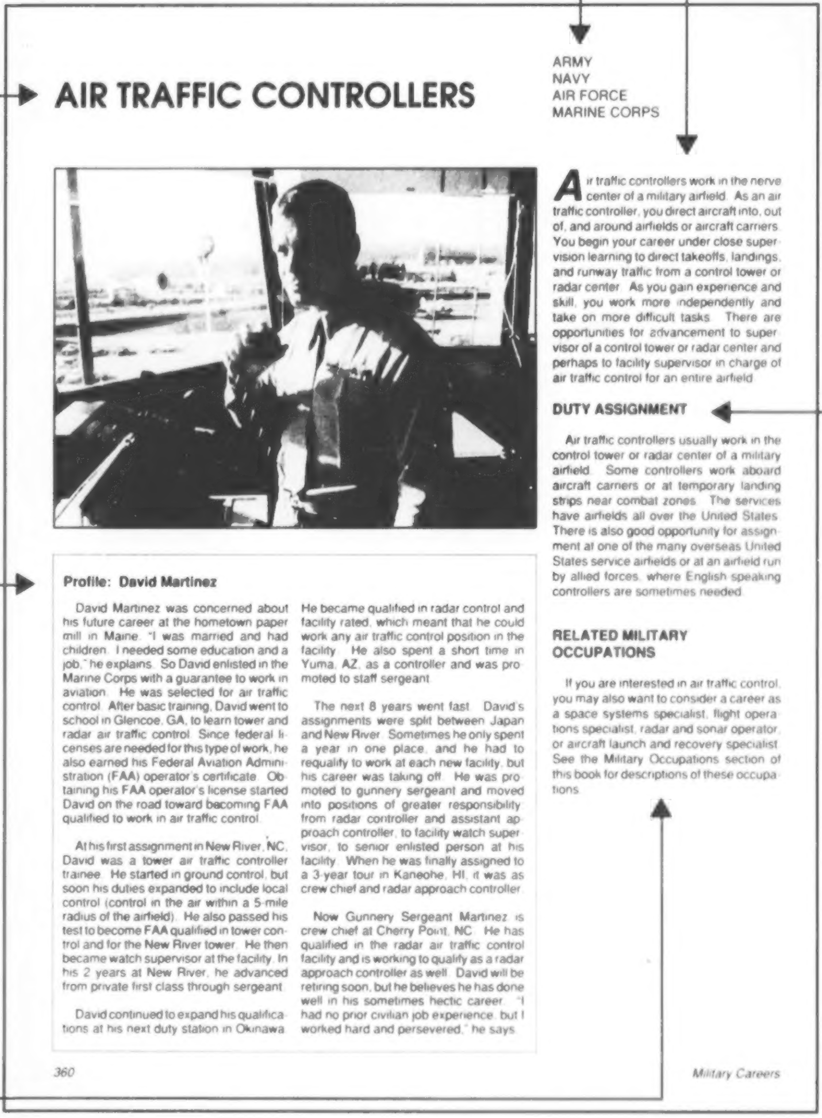
This section identifies other occupations in the military services with similar work and career paths. Descriptions of the related occupations can be found in the Military Occupations section of this book.

Military Service Representation

The military services, listed next to the title, offer employment and training opportunities in the occupation.

Introduction

The "Introduction" summarizes the job duties and the career path for the military occupation.



AIR TRAFFIC CONTROLLERS

ARMY
NAVY
AIR FORCE
MARINE CORPS

Air traffic controllers work in the nerve center of a military airfield. As an air traffic controller, you direct aircraft into, out of, and around airfields or aircraft carriers. You begin your career under close supervision learning to direct takeoffs, landings, and runway traffic from a control tower or radar center. As you gain experience and skill, you work more independently and take on more difficult tasks. There are opportunities for advancement to supervisor of a control tower or radar center and perhaps to facility supervisor in charge of air traffic control for an entire airfield.

DUTY ASSIGNMENT

Air traffic controllers usually work in the control tower or radar center of a military airfield. Some controllers work aboard aircraft carriers or at temporary landing strips near combat zones. The services have airfields all over the United States. There is also good opportunity for assignment at one of the many overseas United States service airfields or at an airfield run by allied forces, where English speaking controllers are sometimes needed.

RELATED MILITARY OCCUPATIONS

If you are interested in air traffic control, you may also want to consider a career as a space systems specialist, flight operations specialist, radar and sonar operator, or aircraft launch and recovery specialist. See the Military Occupations section of this book for descriptions of these occupations.

Profile: David Martinez

David Martinez was concerned about his future career at the hometown paper mill in Maine. "I was married and had children. I needed some education and a job," he explains. So David enlisted in the Marine Corps with a guarantee to work in aviation. He was selected for air traffic control. After basic training, David went to school in Glencoe, GA, to learn tower and radar air traffic control. Since federal licenses are needed for this type of work, he also earned his Federal Aviation Administration (FAA) operator's certificate. Obtaining his FAA operator's license started David on the road toward becoming FAA qualified to work in air traffic control.

At his first assignment in New River, NC, David was a tower air traffic controller trainee. He started in ground control, but soon his duties expanded to include local control (control in the air within a 5-mile radius of the airfield). He also passed his test to become FAA qualified in tower control and for the New River tower. He then became watch supervisor at the facility. In his 2 years at New River, he advanced from private first class through sergeant.

David continued to expand his qualifications at his next duty station in Okinawa. He became qualified in radar control and facility rated, which meant that he could work any air traffic control position in the facility. He also spent a short time in Yuma, AZ, as a controller and was promoted to staff sergeant.

The next 8 years went fast. David's assignments were split between Japan and New River. Sometimes he only spent a year in one place, and he had to requalify to work at each new facility, but his career was taking off. He was promoted to gunnery sergeant and moved into positions of greater responsibility, from radar controller and assistant approach controller, to facility watch supervisor, to senior enlisted person at his facility. When he was finally assigned to a 3-year tour in Kaneohe, HI, it was as crew chief and radar approach controller.

Now Gunnery Sergeant Martinez is crew chief at Cherry Point, NC. He has qualified in the radar air traffic control facility and is working to qualify as a radar approach controller as well. David will be retiring soon, but he believes he has done well in his sometimes hectic career. "I had no prior civilian job experience, but I worked hard and persevered," he says.

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Military Careers

Duty Assignment

Throughout their careers, military personnel are assigned to new duties and locations. This section describes the type of military organizations and installations where people in this career may be assigned. It also discusses the opportunities for overseas assignments. Any major exceptions to the typical career path are noted at the end of this section.

Advancement

Military careers typically advance through three to five career levels. Promotion to each level requires improving job skills and accepting more responsibility. This section describes the skills, qualities, and abilities needed to advance through the career levels.

Training

This section summarizes the military training provided to personnel at all career levels. It describes initial job training, advanced skill training, training for job specialties, and leadership training.

Typical Career Path

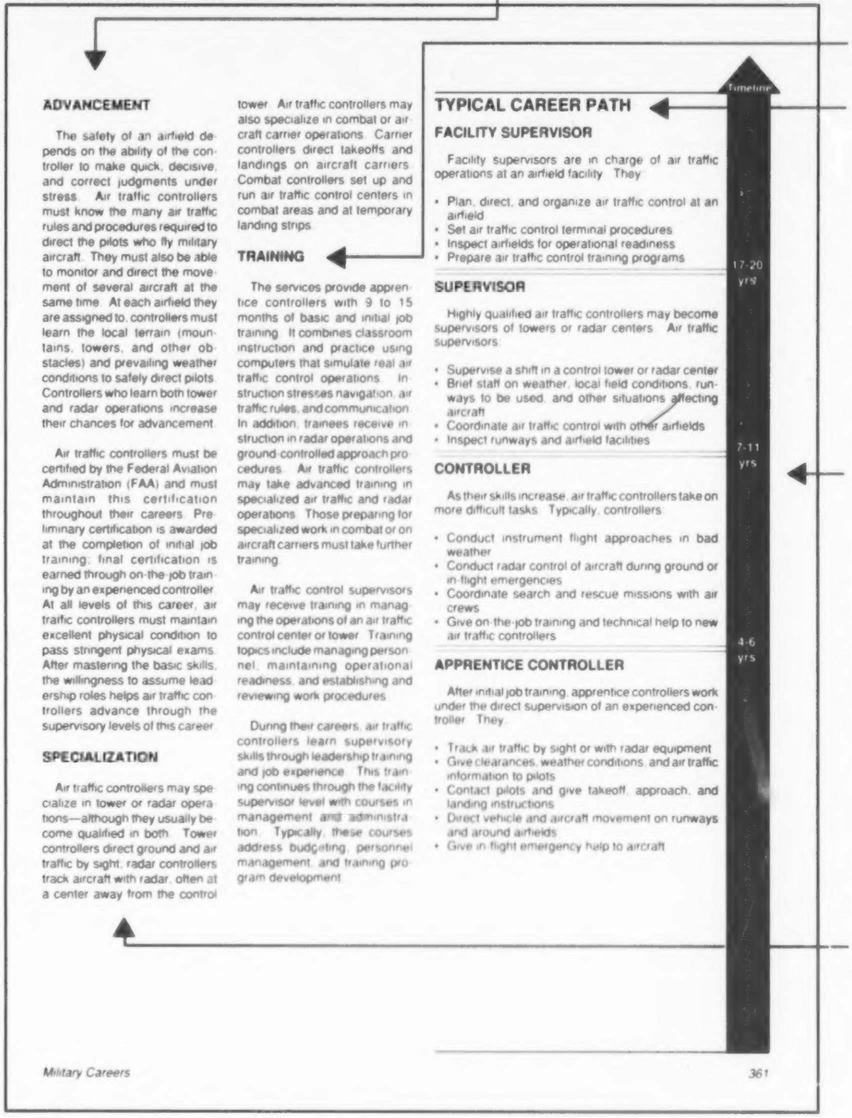
This section describes the typical levels of advancement within the occupation. A description of the typical job duties is provided for each level. Because job specialties may differ among the services, some of the job titles and duties listed may not apply to all services. Each title shown in the "Typical Career Path" is descriptive of the duties for that level and is not a specific military job title.

Timeline

The "Timeline" illustrates the average time it takes to move through career levels. The time for each individual career will differ according to an individual's performance and the needs of the specific military service. It is important to remember that only qualified individuals are promoted to each level.

Specialization

This section describes the types of job specialties available in this career and summarizes the career possibilities across the services. The career path and job duties for individual job specialties may differ somewhat from the "Typical Career Path" described in this book.



ADVANCEMENT

The safety of an airfield depends on the ability of the controller to make quick, decisive, and correct judgments under stress. Air traffic controllers must know the many air traffic rules and procedures required to direct the pilots who fly military aircraft. They must also be able to monitor and direct the movement of several aircraft at the same time. At each airfield they are assigned to, controllers must learn the local terrain (mountains, towers, and other obstacles) and prevailing weather conditions to safely direct pilots. Controllers who learn both tower and radar operations increase their chances for advancement.

Air traffic controllers must be certified by the Federal Aviation Administration (FAA) and must maintain this certification throughout their careers. Preliminary certification is awarded at the completion of initial job training; final certification is earned through on-the-job training by an experienced controller. At all levels of this career, air traffic controllers must maintain excellent physical condition to pass stringent physical exams. After mastering the basic skills, the willingness to assume leadership roles helps air traffic controllers advance through the supervisory levels of this career.

SPECIALIZATION

Air traffic controllers may specialize in tower or radar operations—although they usually become qualified in both. Tower controllers direct ground and air traffic by sight; radar controllers track aircraft with radar, often at a center away from the control tower. Air traffic controllers may also specialize in combat or aircraft carrier operations. Carrier controllers direct takeoffs and landings on aircraft carriers. Combat controllers set up and run air traffic control centers in combat areas and at temporary landing strips.

TRAINING

The services provide apprentice controllers with 9 to 15 months of basic and initial job training. It combines classroom instruction and practice using computers that simulate real air traffic control operations. Instruction stresses navigation, air traffic rules, and communication. In addition, trainees receive instruction in radar operations and ground-controlled approach procedures. Air traffic controllers may take advanced training in specialized air traffic and radar operations. Those preparing for specialized work in combat or on aircraft carriers must take further training.

Air traffic control supervisors may receive training in managing the operations of an air traffic control center or tower. Training topics include managing personnel, maintaining operational readiness, and establishing and reviewing work procedures.

During their careers, air traffic controllers learn supervisory skills through leadership training and job experience. This training continues through the facility supervisor level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

TYPICAL CAREER PATH

Timeline

FACILITY SUPERVISOR

Facility supervisors are in charge of air traffic operations at an airfield facility. They:

- Plan, direct, and organize air traffic control at an airfield
- Set air traffic control terminal procedures
- Inspect airfields for operational readiness
- Prepare air traffic control training programs

17-20 yrs

SUPERVISOR

Highly qualified air traffic controllers may become supervisors of towers or radar centers. Air traffic supervisors:

- Supervise a shift in a control tower or radar center
- Brief staff on weather, local field conditions, runways to be used, and other situations affecting aircraft
- Coordinate air traffic control with other airfields
- Inspect runways and airfield facilities

7-11 yrs

CONTROLLER

As their skills increase, air traffic controllers take on more difficult tasks. Typically, controllers:

- Conduct instrument flight approaches in bad weather
- Conduct radar control of aircraft during ground or in-flight emergencies
- Coordinate search and rescue missions with air crews
- Give on-the-job training and technical help to new air traffic controllers

4-6 yrs

APPRENTICE CONTROLLER

After initial job training, apprentice controllers work under the direct supervision of an experienced controller. They:

- Track air traffic by sight or with radar equipment
- Give clearances, weather conditions, and air traffic information to pilots
- Contact pilots and give takeoff, approach, and landing instructions
- Direct vehicle and aircraft movement on runways and around airfields
- Give in-flight emergency help to aircraft

Military Careers 361

Developing Your Own Career Plan

As you read the career profiles that are included in *Military Careers*, remember that each person's career is unique because no one has exactly the same set of experiences—personal, educational, or job-related—as anyone else. Individuals grow, and their interests often change as they gain more knowledge and skills. The work environment also changes, and that has never been more true than in today's world.

Career planning involves exploring careers or work situations that interest you and developing a plan to reach your desired career or work situation. Following the steps listed below, you can begin developing your own plan. Completing these activities will require time and energy on your part. Once you have finished all the steps, you will have developed an initial career plan.

Step 1: Imagine your ideal career or work situation

- Describe the ideal career or work situation you would like to have five years from now. Think of this as your career goal.
    - You may want to use reference books available from your school counselor such as the *Occupational Outlook Handbook* for information on various occupations, or, if one is available, you may wish to use your school's computerized career information system.
- Outline a plan for obtaining the education/training or skills for reaching your desired career or work situation. Organize the information into the following format:

Ideal Work Situation/Career Plan

- Career title or work situation
- Career description
- Education/training/skills required
- Plan for reaching my goal

Step 2: Share your goals and plan with others for their reactions

- Ask two or three friends for their views about your plan
- Ask your counselor and/or teachers if they think your plan is realistic
- Discuss your career goal and plan with your parents and ask their advice
- Interview one or two people whose work is similar to your career goal to learn the experiences they have had over the years

Asking for feedback from others tests your ideas and helps you determine how realistic your plans are. Ask specific questions (e.g., Does my plan seem to build on my past experiences? Will this career result in a lifestyle I want? Will I be able to complete the education and training requirements?), and be sure that you understand the reasoning of those advising you.

Step 3: Revise your goal and plan

- Evaluate the feedback you received from others and make changes in your plan if necessary
    - Perhaps you will need to seek more career information before doing so

Step 4: Take action

- Begin actions to implement your plan
- Develop a timetable to monitor and evaluate your progress
- Share your timetable and progress with others such as your parents or career guidance counselor
- Continue to review your goal and plan as you learn more

Developing a career plan is not a one-time experience. It is a process that you will repeat many times in your life as you acquire more information about yourself and careers and as you experience new problems and opportunities. Your school counselor has additional information available to help you learn more about exploring the world of work and planning for your future.

Examining Enlisted Career Path Descriptions

Deciding to join the military is typically an initial career decision; the career path of each enlisted person is different because it reflects the interests, skills, and abilities of that individual and availability of different military occupations. As you read the specific career descriptions that follow, keep in mind that individuals who choose the military as their work place have many opportunities for change and advancement.

Read the profile for Juan Delgado under "Computer Programmers" on page 372. Several examples mentioned show the uniqueness of Juan's experiences in the military. For example:

- Juan did not join the military right after graduating from high school. He tried many things, including college and the National Guard, before deciding to enlist.
- Upon enlistment, Juan did not start in computer programming. He spent his first four years in the infantry, moving to computer programming after reenlisting.
- After computer school, Juan started as a programmer/analyst. While working in that position, he learned technical writing—in other words, Juan was preparing himself for advancement while carrying out his job responsibilities.
- Juan notes that he likes "interacting with other programmers/analysts." Juan's ability to work with people as well as computers should help him if he decides to seek advancement into supervisory positions.
- Juan Delgado's first assignment was overseas even though most military computer programmers work in the United States.

Questions to Consider

Ask yourself the following questions as you read each enlisted career description:

a) Would I like to have a career in this occupation?

If what you read in the description and typical career path interests you, learn more about it and related enlisted occupations by reading the Computer Programmer Description in the Military Occupations section of *Military Careers*.

b) How much training and retraining is necessary to succeed in this career?

Computer programmers receive training and retraining throughout their careers because of changing technology. The military is also supportive of those who take the initiative to obtain training on their own.

c) How can I advance in rank and responsibility?

In computer programming, as in most careers, advancement usually includes taking on supervisory responsibilities. Look at the average timelines for advancement. Remember that not all people advance at this rate—advancement is dependent upon succeeding in training and job performance and receiving the recommendation of one's commanding officer.

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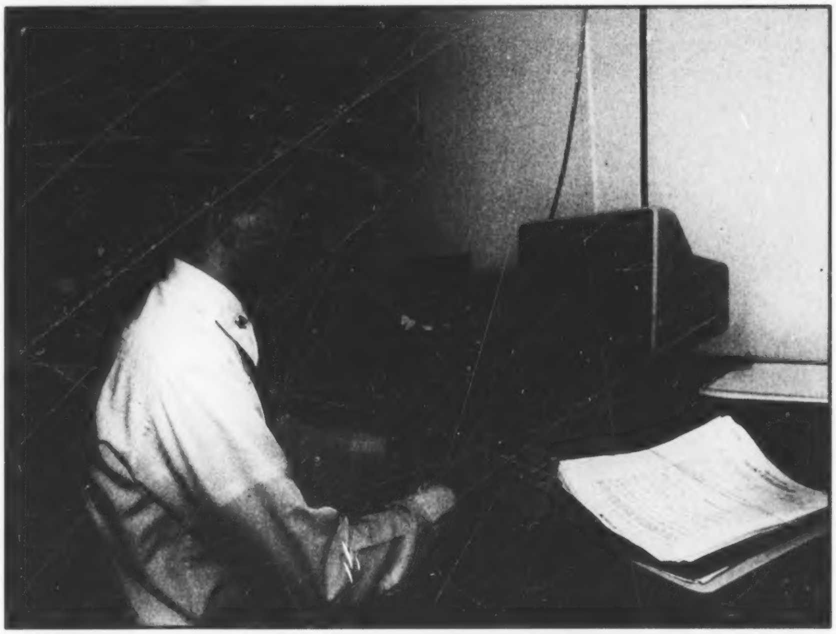
Sample of Military Enlisted Career Path Descriptions

ADMINISTRATIVE SUPPORT SPECIALISTS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD



The services need accurate and up-to-date information to make sound planning and management decisions. Written and automated records are kept on almost all aspects of the military, including funds, supplies, personnel, and equipment. As an administrative support specialist, you maintain files, record information, and type reports and correspondence. You begin your career performing typing and clerical duties. As you gain experience, you may help manage office operations. There are opportunities to advance to clerical supervisor and perhaps to office manager positions.

DUTY ASSIGNMENT

Administrative support specialists usually work in office settings on land and aboard ship. Many work in small groups, giving clerical help to small- or medium-sized military units. Others are assigned to large administrative offices that provide a broad range of clerical services. Those who work in these consolidated offices are likely to work with civilian employees. Many specialists are also assigned to assist in the administration of personnel, finance, or supply units. Most administrative specialists work at military bases in the United States, but opportunities are good for overseas duty.

ADVANCEMENT

Because administrative support specialists work closely with other people, they must have good communications skills and be able to work easily with others. The ability to do neat and accurate work is essential. Since administrative support specialists must work with many different military forms and regulations, they must be logical, well organized, and have a good memory for detail. They must also have excellent typing skills and a superior knowledge of spelling, grammar, and punctuation. After mastering the basic skills, the willingness to assume leadership roles and additional responsibilities helps administrative support specialists advance through the supervisory levels of this career.

Profile: Ray Lee

Ray Lee joined the Coast Guard on the recommendation of an older brother who had already joined. After boot camp, he was sent for his general duty assignment to the United States Coast Guard (USCG) Yard, Baltimore, MD. As a seaman apprentice, he worked on vessels at the yard and learned basic seamanship. He was also selected to be in the color guard representing the Coast Guard in parades and other ceremonies.

While in Baltimore, Ray took a Coast Guard correspondence course in administrative support and became a trainee in this field. This is when his career really began. He started out in a personnel office, typing correspondence, maintaining service records, preparing forms, and operating computers and word processors. He liked his new career. "I enjoy working with people and I like a desk job," he explains.

After 2 years at the Yard, Ray was assigned to USCG Headquarters, Washington, DC, in the legal administration division, where he worked processing and preparing legal documents. He was selected for a 16-week course at the Defense Race Relations Institute, Patrick Air Force Base, FL, where he trained to be an equal opportunity specialist and military civil rights counselor/facilitator. Ray says, "I enjoy providing a service to people, when I help someone or solve a problem." After 5 1/2 years at Headquarters, Ray was assigned to shipboard duty.

To prepare for his new assignment, Ray was given advanced training in the computerized systems used on board Coast Guard ships. He was then assigned to the USCG cutter *Hamilton*. As the cutter's yeoman, he handled 180 service records and maintained and updated all publications for the cutter. Ray was on board when the cutter went on search and rescue, pollution cleanup, and law enforcement missions.

After 2 years on the cutter, Ray was again assigned to USCG Headquarters, this time in the command post exercise division. Working with classified information, he helped coordinate and plan wargames for 2 years. He was then personally selected by the Master Chief Petty Officer of the Coast Guard to be his aide. Since he works for the top enlisted person of the Coast Guard, he feels he must know everything. "I have to be ready to carry on when he's not there," says Ray.

TRAINING

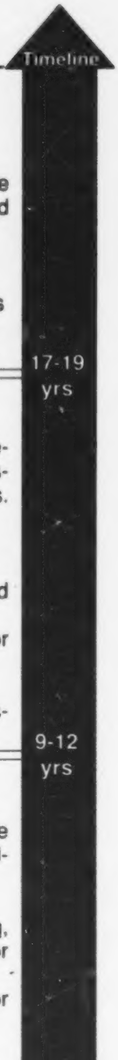
The services provide administrative support specialists with 10 to 14 months of basic and initial job training. It combines classroom instruction and on-the-job training. Classroom training emphasizes typing and updating manuals and regulations. On-the-job training includes such topics as filing systems, office practices, and special requirements for routing administrative materials. Depending on their assignment, administrative support specialists may be trained to operate computer terminals, teletype machines, or word processing equipment.

During their career, administrative support specialists learn supervisory skills through leadership training and job experience. This training continues through the level of office manager with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in administrative support work, you may want to consider a career as an accounting specialist, court reporter, data entry specialist, payroll specialist, or personnel specialist. See the Administrative Occupations cluster in the Military Occupations section of this book.

TYPICAL CAREER PATH



OFFICE MANAGER

Office managers supervise consolidated office facilities or serve as senior supervisors at command or staff headquarters. They:

- Plan and control administrative support
- Implement or recommend new office procedures
- Obtain office furniture, equipment, and supplies
- Develop operating budgets and track expenses

CLERICAL SUPERVISOR

Administrative technicians may advance to become clerical supervisors responsible for supervising one or more administrative support sections. They:

- Train new personnel
- Prepare directives, job descriptions, and standard operating procedures
- Review and edit correspondence before routing for signature
- Divide the work load among personnel
- Sign for, log, inventory, file, and safeguard classified documents

ADMINISTRATIVE TECHNICIAN

Administrative technicians perform responsible clerical duties and give technical assistance to administrative clerks. They may:

- Proofread typed material for errors in spelling, punctuation, sentence structure, and missing or unnecessary information
- Route copies of letters, memos, and forms for rework or signature
- Maintain logs, duty rosters, and leave records
- Compose and type routine correspondence
- Take and transcribe dictation

ADMINISTRATIVE CLERK

After initial job training, administrative clerks perform clerical duties. They:

- Use a word processor to type regulations, directives, requisitions, correspondence, and similar materials from notes, drafts, and instructions
- Check draft and final copies for spelling, grammar, typing errors, proper format, and use of authorized abbreviations
- Greet and direct visitors to the proper office
- Answer telephones and take messages
- Open, sort, route, and deliver mail and messages

AIR CREW MEMBERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

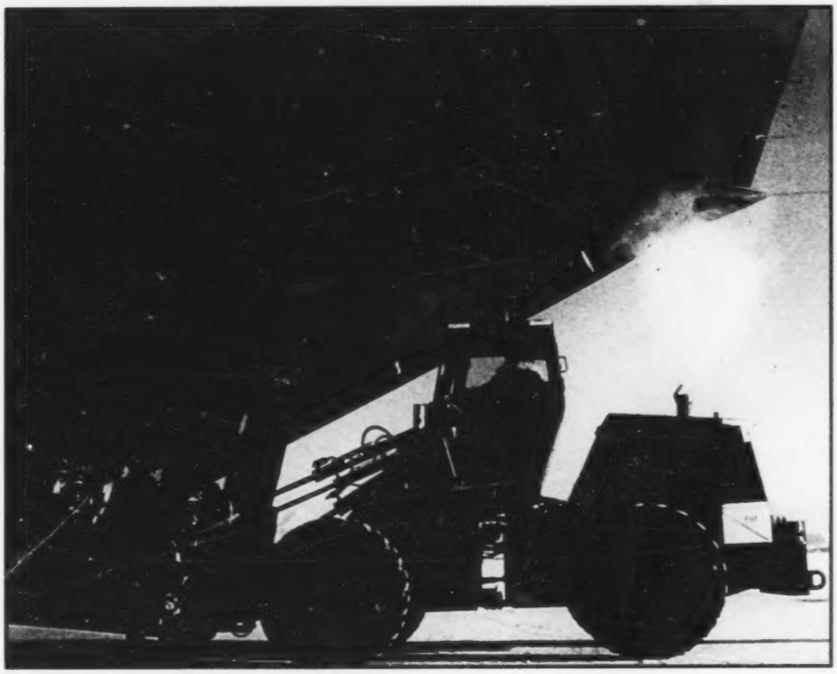
Personnel in each service can "earn their wings" and qualify as a member of a flight crew. Air crew members perform specialized duties for many different military missions. As an air crew member, you may operate in-flight refueling systems, defensive guns on bombers, or submarine detection systems. You may also perform rescue and recovery missions or direct cargo and passenger loading, unloading, and airdrops. You begin your career performing the tasks of your specialty that you will continue to perform throughout your career. As you develop leadership skills, there are opportunities to advance to air crew leader and perhaps to air crew operations supervisor.

DUTY ASSIGNMENT

Air crew members work in all types of aircraft, from cargo planes and bombers to helicopters. Air crews operate from airfields or ships anywhere in the world, but the specialty an air crew member selects affects the assignments available. For example, loadmasters are assigned to airlift squadrons whose missions of moving cargo and passengers take them on flights all over the world. Gunners, on the other hand, are assigned only to squadrons flying large bombers and usually return to their home base at the end of each mission. Overseas assignment opportunities may be limited for some specialties, but most air crew members travel as part of their job.

RELATED MILITARY OCCUPATIONS

If you are interested in becoming an air crew member, you might also want to consider a career as a flight engineer or an aircraft launch and recovery specialist. See the Transportation and Material Handling Occupations cluster in the Military Occupations section of this book.



Profile: Dennis Goelf

At 22, Dennis Goelf had finished high school and had been working for 4 years when he decided to join the Air Force. At first he thought he wanted to be an aircraft mechanic, but during basic training, he volunteered to go to loadmaster school. He says, "That way I could be a mechanic *and* I could fly." He completed 3 months of training in Savannah, GA, and then spent 3 more years maintaining air cargo and airdrop equipment. He also flew missions to drop supplies for use in field exercises.

After 4 1/2 years, Dennis decided he wanted an Air Force career. He liked his job, the security it provided, and the opportunity it gave him to get ahead. By reenlisting, Dennis also knew he would go overseas on his next assignment. For nearly 2 years, he flew out of Okinawa, delivering food, supplies, and troops—sometimes dropping supplies to troops in the field.

For the past 10 years, Dennis has been assigned first to Travis Air Force Base (AFB), CA, then to McGuire AFB, NJ. During both of these assignments, he has held many different jobs and has traveled worldwide. He has also completed an associate's degree through courses offered on base and a bachelor's degree through a special on-base program run by a private college.

Dennis has advanced during his career as a loadmaster. Shortly after arriving at Travis AFB, he became crew leader. He then worked his way up the ladder in his squadron, taking on more responsibility. As a trainer at McGuire AFB, he prepared new loadmasters for work on C-141 aircraft. He advanced to flight examiner and then to assistant chief of loadmasters. After 2 years, Dennis became an air crew operations manager. This position brought him his most challenging assignment—managing all Air Force cargo and passenger equipment from the Mississippi River to Egypt. Dennis made sure that the right type of equipment, from cargo containers to passenger seats, was available at the right airfield when it was needed. For the past several years, Dennis has been the chief of loadmasters for several different squadrons, managing loadmasters carrying supplies throughout the world.

ADVANCEMENT

Air crew members must have a genuine interest in flying and be in excellent physical condition. They must pass periodic flight physical examinations to keep their qualifications to fly. Air crew members must master the duties of their specialty to gain the confidence of the aircraft commander and other crew members. They must also be able to work efficiently as a member of a team, sometimes during hazardous and stressful situations. Because there is little room for error in aircraft flight crew operations, they must be able to perform their duties in a calm and deliberate manner. After mastering the basic skills, the willingness to assume leadership roles and to accept additional responsibilities helps air crew members advance through supervisory levels of this career.

SPECIALIZATION

Air crew members specialize in such areas as:

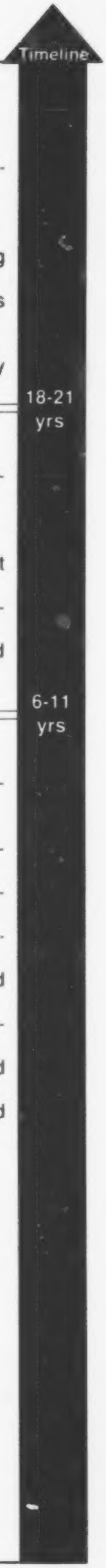
- In-flight refueling — extending fuel hoses from the tail section of a tanker aircraft to the receiving port of the aircraft to be fueled and operating controls to pump fuel loads
- Defensive gunnery — operating aircraft gun systems to repel and destroy enemy attack aircraft
- Antisubmarine warfare — operating acoustic sensors (machines that detect sounds), airborne radar or sonar, or infrared equipment (machines that detect heat) on jets or helicopters to find and identify submarines
- Rescue and recovery — operating helicopter hoists to lift equipment and personnel from land or sea
- Air transport — planning and directing the loading, unloading, and weight distribution of cargo or personnel, including directing cargo or troop airdrops

TRAINING

The services provide aircrew members with 8 to 13 months of basic and initial job training. It combines classroom instruction, practical exercises, and on-the-job training. Depending on the air crew specialty, classroom training covers operation and maintenance of equipment as well as flying duties. Specialties may also require courses in air crew survival, scuba diving, combat crew training, or aircraft emergency procedures.

On-the-job training is conducted by air crew leaders. This training continues throughout the career through special mission flight operations and debriefing sessions conducted by the aircraft commander and the air crew operations supervisor. Over the course of their careers, air crew members may return to school for training in new aircraft or airborne equipment used in their specialties.

During their careers, air crew members learn supervisory skills through leadership training and job experience. This training continues through the air crew operations supervisor level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.



TYPICAL CAREER PATH

AIR CREW OPERATIONS SUPERVISOR

Highly skilled air crew leaders may become supervisors of air crew operations. They:

- Plan and organize air crew activities
- Assist in planning in-flight operations and training missions
- Conduct mission briefings and prepare operations orders
- Inspect and evaluate unit activities and facilities
- Review air crew records and reports for accuracy and completeness

AIR CREW LEADER

Skilled air crew members may become crew leaders. At this level, they:

- Plan, schedule, and assign work duties
- Instruct air crew members about equipment changes
- Conduct in-flight and ground air crew training programs
- Conduct inspection of airborne systems and equipment
- Prepare in-flight mission reports and logs

AIR CREW MEMBER

Depending on their specialty after initial job training, air crew members may:

- Conduct the preflight check or verify the airworthiness of airborne equipment
- Operate and control tanker aircraft in-flight refueling systems
- Operate aircraft missile or gun systems on strategic bombers
- Operate airborne antisubmarine detection and tracking equipment
- Perform helicopter-assisted rescue and equipment recovery operations
- Prepare plans for loading aircraft fuel, cargo, and passengers
- Perform operational maintenance on specialized airborne equipment

AIR TRAFFIC CONTROLLERS

ARMY
NAVY
AIR FORCE
MARINE CORPS

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DUTY ASSIGNMENT

Air traffic controllers usually work in the control tower or radar center of a military airfield. Some controllers work aboard aircraft carriers or at temporary landing strips near combat zones. The services have airfields all over the United States. There is also good opportunity for assignment at one of the many overseas United States service airfields or at an airfield run by allied forces, where English-speaking controllers are sometimes needed.

RELATED MILITARY OCCUPATIONS

If you are interested in air traffic control, you may also want to consider a career as a space systems specialist, flight operations specialist, radar and sonar operator, or aircraft launch and recovery specialist. See the Military Occupations section of this book for descriptions of these occupations.

Profile: David Martinez

David Martinez was concerned about his future career at the hometown paper mill in Maine. "I was married and had children. I needed some education and a job," he explains. So David enlisted in the Marine Corps with a guarantee to work in aviation. He was selected for air traffic control. After basic training, David went to school in Glencoe, GA, to learn tower and radar air traffic control. Since federal licenses are needed for this type of work, he also earned his Federal Aviation Administration (FAA) operator's certificate. Obtaining his FAA operator's license started David on the road toward becoming FAA qualified to work in air traffic control.

At his first assignment in New River, NC, David was a tower air traffic controller trainee. He started in ground control, but soon his duties expanded to include local control (control in the air within a 5-mile radius of the airfield). He also passed his test to become FAA qualified in tower control and for the New River tower. He then became watch supervisor at the facility. In his 2 years at New River, he advanced from private first class through sergeant.

David continued to expand his qualifications at his next duty station in Okinawa. He became qualified in radar control and facility rated, which meant that he could work any air traffic control position in the facility. He also spent a short time in Yuma, AZ, as a controller and was promoted to staff sergeant.

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Now Gunnery Sergeant Martinez is crew chief at Cherry Point, NC. He has qualified in the radar air traffic control facility and is working to qualify as a radar approach controller as well. David will be retiring soon, but he believes he has done well in his sometimes hectic career. "I had no prior civilian job experience, but I worked hard and persevered," he says.

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The safety of an airfield depends on the ability of the controller to make quick, decisive, and correct judgments under stress. Air traffic controllers must know the many air traffic rules and procedures required to direct the pilots who fly military aircraft. They must also be able to monitor and direct the movement of several aircraft at the same time. At each airfield they are assigned to, controllers must learn the local terrain (mountains, towers, and other obstacles) and prevailing weather conditions to safely direct pilots. Controllers who learn both tower and radar operations increase their chances for advancement.

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The services provide apprentice controllers with 9 to 15 months of basic and initial job training. It combines classroom instruction and practice using computers that simulate real air traffic control operations. Instruction stresses navigation, air traffic rules, and communication. In addition, trainees receive instruction in radar operations and ground-controlled approach procedures. Air traffic controllers may take advanced training in specialized air traffic and radar operations. Those preparing for specialized work in combat or on aircraft carriers must take further training.

Air traffic control supervisors may receive training in managing the operations of an air traffic control center or tower. Training topics include managing personnel, maintaining operational readiness, and establishing and reviewing work procedures.

During their careers, air traffic controllers learn supervisory skills through leadership training and job experience. This training continues through the facility supervisor level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

Timeline

TYPICAL CAREER PATH

FACILITY SUPERVISOR

Facility supervisors are in charge of air traffic operations at an airfield facility. They:

- Plan, direct, and organize air traffic control at an airfield
- Set air traffic control terminal procedures
- Inspect airfields for operational readiness
- Prepare air traffic control training programs

17-20 yrs

SUPERVISOR

Highly qualified air traffic controllers may become supervisors of towers or radar centers. Air traffic supervisors:

- Supervise a shift in a control tower or radar center
- Brief staff on weather, local field conditions, runways to be used, and other situations affecting aircraft
- Coordinate air traffic control with other airfields
- Inspect runways and airfield facilities

7-11 yrs

CONTROLLER

As their skills increase, air traffic controllers take on more difficult tasks. Typically, controllers:

- Conduct instrument flight approaches in bad weather
- Conduct radar control of aircraft during ground or in-flight emergencies
- Coordinate search and rescue missions with air crews
- Give on-the-job training and technical help to new air traffic controllers

4-6 yrs

APPRENTICE CONTROLLER

After initial job training, apprentice controllers work under the direct supervision of an experienced controller. They:

- Track air traffic by sight or with radar equipment
- Give clearances, weather conditions, and air traffic information to pilots
- Contact pilots and give takeoff, approach, and landing instructions
- Direct vehicle and aircraft movement on runways and around airfields
- Give in-flight emergency help to aircraft

AIRCRAFT LAUNCH AND RECOVERY SPECIALISTS

NAVY
MARINE CORPS

Takeoffs and landings on an aircraft carrier are far from routine, even in the best weather. As an aircraft launch and recovery specialist, you work on the flight deck operating and maintaining catapults (plane launching devices), arresting gear (devices that slow down landing planes), barricades, and other equipment to launch and land aircraft safely. You begin your career working as an apprentice team member performing duties at designated launch or recovery stations. As your skills increase, you take greater responsibility and repair and overhaul equipment. There are opportunities to advance to crew supervisor and perhaps to flight deck supervisor.

DUTY ASSIGNMENT

Aircraft launch and recovery specialists work on aircraft carriers at sea and at ports of call all over the world. Some launch and recovery specialists also work at advanced-based landing fields set up near infantry training sites or combat zones to provide air support to combat troops. When assigned to airfields on land, launch and recovery workers install land-based crash barriers and barricades and maintain runway lighting systems. They also operate equipment that helps pilots take off or land on short runways.

RELATED MILITARY OCCUPATIONS

If you are interested in a career as an aircraft launch and recovery specialist, you may also want to consider a career as a flight operations specialist, air traffic controller, or radar and sonar operator. See the Military Occupations section of this book for descriptions of these occupations.

Profile: Jim Griffith

Jim Griffith's decision to follow his brothers into the service seemed the best answer to limited job opportunities. He joined the Navy with the idea of becoming an electrician, but his first assignment changed his mind. After basic training, he was assigned to the aircraft carrier USS *Coral Sea*, where he worked on the flight deck with a catapult crew. He enjoyed his work repairing and maintaining the mechanical equipment so much that he asked for formal training in this field. His request was granted, and he went to Philadelphia for classes in becoming a catapult operator.

Jim liked his new job; still, he left the Navy after his 4-year enlistment to go home and get married. Within 3 months, he had reenlisted because, as he puts it, "There were few jobs that offered me a chance to make something of myself." Following reenlistment, Jim spent nearly 2 years as catapult crew leader on the USS *Wasp*, where one of his older brothers was also assigned. He then spent a year in Lakehurst, NJ, as a crew leader testing new parts and newly designed catapult systems.

Jim's next assignment took him to the West Coast and the USS *Bennington*. He was responsible for a crew of 40 men who maintained and operated two catapults. One big job involved supervising work on the catapult system for a major ship overhaul. He also served aboard the USS *Ranger* on several cruises to Vietnam as supervisor of a catapult operation.

Jim was then selected to become an instructor at the Navy's school at Lakehurst. For 4 years, he taught the basics of operating and maintaining catapult systems to 250 students a year. He was also promoted to chief petty officer—the goal he had set for himself when he joined the Navy. Following an assignment on the USS *Roosevelt*, Jim was promoted to flight deck supervisor and served on the USS *Independence* and then the USS *Forrestal*, where he managed a flight deck crew of up to 550 sailors.

For the past several years, Jim has been back at Lakehurst managing the launch and recovery school. Jim enjoys teaching and working with younger people to help them establish themselves in their career. He believes he has made a significant contribution to the Navy. "But then," he says, "the Navy has rewarded me in turn."

ADVANCEMENT

Launch and recovery specialists must be accurate and safety-minded because the lives of aviators and flight deck workers depend on their work. They must have the technical skills to maintain and repair one type of flight deck equipment. To advance, specialists need to develop the ability to diagnose problems and repair different types of flight deck equipment. They must also be able to operate this equipment and be prepared to act quickly in case of equipment malfunctions or emergencies.

After mastering the basic skills, the willingness to assume leadership roles helps launch and recovery specialists advance through the supervisory levels of this career. Launch and recovery crew supervisors who apply to become flight deck supervisors must compete with aircraft handling and fueling supervisors for promotion. Hence, a familiarity with and understanding of these other occupations is important; however, the chief consideration for advancement is the individual's ability to give overall direction to carrier flight deck operations.

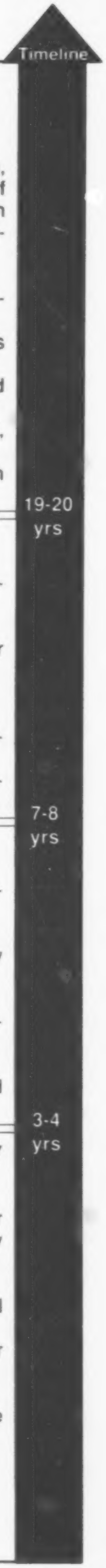
TRAINING

The services provide apprentice launch and recovery specialists with 6 to 18 months of basic and initial job training. It starts with a short course covering the basic elements of aviation, including how planes take off and land. Carrier-based personnel take additional courses in operating and maintaining specific types of arresting gear or catapults. These courses also cover hydraulics and the flight deck duties of the launch and recovery specialist. Later in their careers, specialists may take additional training to become familiar with a system used in a new assignment. Advanced training is available covering the operation, inspection, and maintenance of different types of catapults, barricades, and arresting gear.

Individuals who work at expeditionary airfields take the same aviation basics course as those working on aircraft carriers. These individuals then receive specialized instruction in installing, inspecting, and operating land-based arresting gear and barricades.

During their careers, aircraft launch and recovery specialists learn supervisory skills through leadership training and job experience. This training continues through the position of flight deck supervisor with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

TYPICAL CAREER PATH



FLIGHT DECK SUPERVISOR

Flight deck supervisors plan and direct operation, maintenance, and safety programs for all aspects of carrier launch and recovery work, including crash rescue, damage control, aircraft handling, and aviation fueling. Flight deck supervisors:

- Organize, schedule, and evaluate training programs
- Administer long-range maintenance programs and monitor maintenance schedules
- Conduct inspections to ensure that scheduled maintenance has been performed
- Predict requirements for personnel, equipment, and materials
- Review the performance of aircraft handling, crash rescue, and damage control crews

CREW SUPERVISOR

Skilled launch and recovery specialists may become crew supervisors. At this level, they:

- Supervise equipment inspections before and after launch and recovery operations
- Give technical advice and help crew members
- Prepare schedules for preventive maintenance
- Examine faulty parts to determine repair or replacement needs
- Help launch and recovery specialists analyze malfunctions and plan corrective action

LAUNCH AND RECOVERY SPECIALIST

As their skills increase, launch and recovery specialists perform more difficult tasks. They:

- Perform or direct difficult repairs and machinery and equipment overhauls
- Inspect cables, fittings, and wire-rope sockets
- Prepare weekly preventive maintenance schedules
- Inventory supplies, spare parts, and equipment
- Post changes and additions to maintenance and accounting records

APPRENTICE LAUNCH AND RECOVERY SPECIALIST

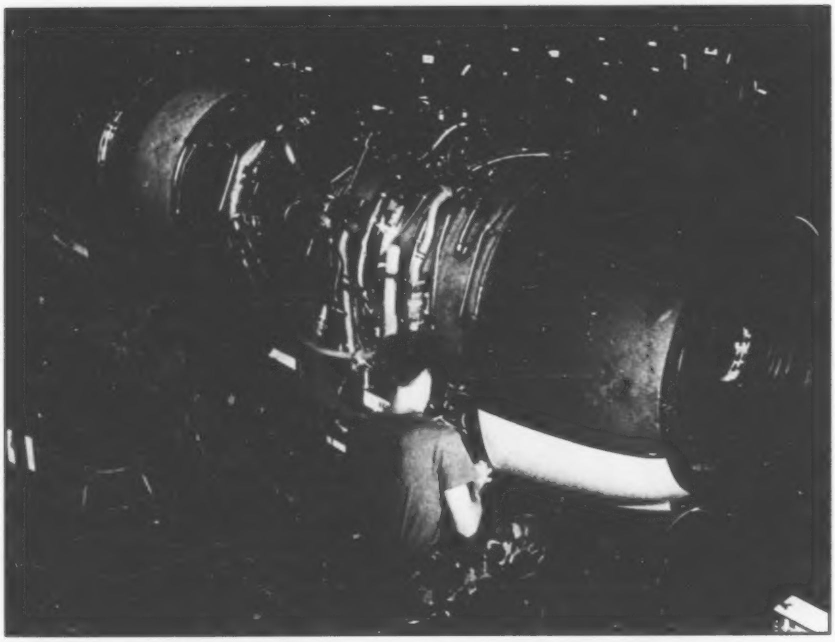
After initial job training, apprentices work under close supervision at designated launch and recovery work stations. They:

- Inspect equipment before and after launch and recovery operations
- Operate controls to fire catapults, raise and lower blast deflectors, or operate arresting gear
- Direct personnel in aircraft launch hookups
- Perform preventive maintenance and complete maintenance records

This career is open only to men.

AIRCRAFT MECHANICS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD



The confidence that military flight crews have in their aircraft is a tribute to the mechanics who maintain them. As an aircraft mechanic, you inspect, service, and repair aircraft to keep them airworthy. You begin your career performing routine maintenance and simple repairs under close supervision. As your skills develop, you may be assigned more difficult duties, such as troubleshooting and performing complicated repairs. There are opportunities to advance to shop supervisor and perhaps to supervisor of an entire aircraft maintenance operation.

DUTY ASSIGNMENT

Aircraft mechanics work in aircraft hangars and repair shops on air bases and landing fields or aboard aircraft carriers. They may sometimes work outside on runway flight lines and carrier flight decks. Most aircraft mechanics are assigned to aircraft maintenance units in the United States. However, since the services have military airfields throughout the world and carriers at sea, there is good opportunity for overseas or sea duty assignment.

ADVANCEMENT

Wherever aircraft land or are based, aircraft mechanics are there to keep them safe and ready to fly. Because even a small error may cause a crash, aircraft mechanics must be accurate and thorough in their work. They must have the technical skill to diagnose and fix problems that often affect more than one system of the aircraft. The complexity of aircraft systems and the precision needed to make repairs and adjustments means that mechanics must rely heavily on technical manuals and guides. Aircraft mechanics must be able to find information in the manuals, interpret diagrams, and follow the written work procedures precisely. After mastering the basic skills, the willingness to assume leadership roles helps mechanics advance through the supervisory levels of this career.

Profile: Bill Roche

When he graduated from high school, Bill Roche got his parents' permission to join the Air Force. "I wanted to see different places," he says. After 23 years and 15 different locations, travel is still one of the aspects he likes most about his military career. Bill has lived in Canada, England, Holland, Vietnam, Hawaii, and all over the United States.

Being mechanically inclined—he had always enjoyed working on cars—Bill asked to be trained in aircraft mechanics. After basic training, he went to aircraft mechanic's school and was assigned to Andrews Air Force Base (AFB) near Washington, DC. There he also completed an additional field training course on the Air Force T-33 trainer jet aircraft. After 2 years of performing unscheduled maintenance (pilot-reported problems), Bill went to Goose Bay, Canada, for another field training course on the F-102 aircraft.

Bill returned to the United States on an assignment to Scott AFB, IL, to work on the T-39 Saberliner, a private passenger jet. He went on flying status as the chief mechanic and flew around the country. He was also responsible for making or supervising repairs. Bill decided at this time to make his career in the military. Having just married, he saw the Air Force as a chance to get ahead. But, as Bill says, "It was having a job I really liked and being able to fly as well that really sold me."

Bill was promoted to staff sergeant and spent a year in Vietnam. In his first supervisory job, he coordinated flight line maintenance for a fighter squadron. Then, 2 years after his return to the States, he was selected as an instructor in aircraft mechanics. During this time, he earned another promotion and volunteered to go to Europe. Although most of his 4 years was spent in England and Holland, he and his family were able to travel all over Europe.

Bill and his family had been home for only a year when he volunteered to go to Hawaii. He was promoted there to senior manager and served as the Pacific Air Force Command manager for several types of aircraft, ensuring that materials and supplies reached Air Force units in the Pacific. Bill recently returned to the mainland as assistant manager of a maintenance unit capable of supporting F-15 fighters anywhere in the world.

SPECIALIZATION

Typically, mechanics specialize in a single type of aircraft, such as fighter planes, bombers, cargo or passenger planes, or helicopters. Airplane mechanics specializing on planes often further specialize in particular parts or systems, such as aircraft engines (jet or propeller), airframes (aircraft structural parts), pneudraulic systems, which are a combination of pneumatic (air) and hydraulic (fluid) pressure systems, or aircraft landing gear systems. Depending on the service, a helicopter mechanic may specialize in one system or work on the entire aircraft.

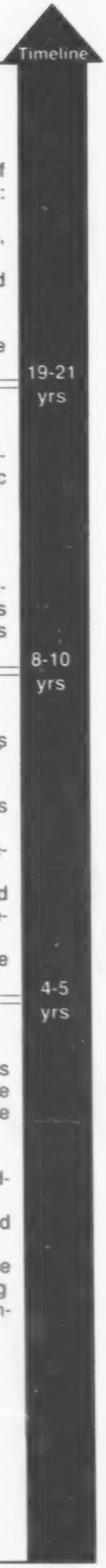
TRAINING

The services provide apprentice aircraft mechanics with 6 to 13 months of basic and initial job training. It includes instruction in general aviation maintenance practices and procedures. This training stresses practical experience as a way of learning to identify aircraft components and systems, what they do, and how they work. It also covers the use of tools, test equipment, and automated performance analyzers. Additional training covers the skills needed for individual specialties. Engine mechanics learn procedures for inspecting, disassembling, and repairing or replacing engines. Airframe mechanics learn to repair aluminum, steel, titanium, plastic, and fiberglass airframes and coverings. Apprentice mechanics also get training on the type of aircraft they will work on during their first assignment. Throughout their careers, aircraft mechanics may receive training on many different aircraft.

Advanced training is available for mechanics in troubleshooting techniques, certification training for inspectors, and technical training on specific aircraft systems. During their careers, aircraft mechanics learn supervisory skills through leadership training and job experience. This training continues through the level of aircraft maintenance supervisor with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in mechanics, you may also want to consider a career as an automobile mechanic, automotive body repairer, engine mechanic, heavy equipment mechanic, marine engine mechanic, or powerhouse mechanic. See the Vehicle and Machinery Mechanic Occupations cluster in the Military Occupations section of this book for descriptions of these and other similar occupations.



TYPICAL CAREER PATH

AIRCRAFT MAINTENANCE SUPERVISOR

At this level, aircraft mechanics are in charge of large aircraft maintenance and repair facilities. They:

- Plan and direct repair, inspection, maintenance, service, and modification of aircraft
- Analyze reports and meet with supervisors to find and resolve bottlenecks
- Develop training and safety programs
- Prepare technical, personnel, and administrative reports

SHOP SUPERVISOR

Highly skilled mechanics become shop supervisors in charge of maintenance and repair for specific types of aircraft. They:

- Develop standard operating procedures
- Conduct or direct on-the-job training programs
- Assign and reassign personnel to handle increased work loads and changing work schedules
- Collect data and prepare production and status reports

MECHANIC

Aircraft mechanics perform more complex repairs and assist other mechanics. At this level, they:

- Help apprentice mechanics identify malfunctions and fix problems
- Perform complicated or unusual tests using special test equipment
- Analyze frequently occurring malfunctions and determine changes that should be made to procedures or equipment
- Disassemble aircraft engines and repair or replace valves, cylinders, and turbine blades

APPRENTICE AIRCRAFT MECHANIC

After initial job training, new aircraft mechanics work under close supervision and perform routine repair and maintenance duties. Typically, apprentice mechanics:

- Repair airframe parts using drills, rivet guns, welding rigs, and sheet metal machines
- Tighten connections on air and fluid lines and hoses using hand tools
- Flush crankcases, clean screens, and grease moving parts to perform routine aircraft servicing
- Record service, maintenance, and repairs in maintenance log records

AUTOMOBILE MECHANICS

ARMY
NAVY
AIR FORCE
MARINE CORPS

Automobile mechanics repair all types of motor vehicles, from basic jeeps to small attack vehicles. As an automobile mechanic, you service and repair all parts of a vehicle, including engines, transmissions, and fuel and electrical systems. You begin your career doing simple repairs and servicing on one type of vehicle. As your skills develop, you perform more challenging duties, such as overhauling engines and troubleshooting difficult problems. There are opportunities to advance to shop supervisor and perhaps to vehicle repair supervisor in charge of an entire automotive maintenance organization.

DUTY ASSIGNMENT

Automobile mechanics usually work in auto repair shops and garages, but may do some outdoor work while making repairs in the field. Mechanics also work in small- to medium-sized motor pools or in larger maintenance and repair centers. Automobile repair units are usually part of a mechanical maintenance organization that services all types of vehicles, including fire trucks, construction equipment, and tanks. Work in these organizations is usually organized by vehicle type(s). Most auto mechanics are assigned to military bases in the United States; however, since the services have automotive vehicles all over the world, there is good opportunity for overseas assignment.

RELATED MILITARY OCCUPATIONS

If you are interested in mechanics, you may also want to consider a career as an engine mechanic, automotive body repairer, heavy equipment mechanic, aircraft mechanic, marine engine mechanic, or powerhouse mechanic. See the Vehicle and Machinery Mechanic Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

Profile: David Jones

When Gunnery Sergeant David Jones was a senior in high school, he knew he didn't want to go to college, but he wasn't sure what he wanted to do. So David enlisted in the Marine Corps. Joining the Marines offered him a break from the routine he saw in civilian life.

David entered the infantry even though he knew it was not what he wanted as a career. After basic and initial infantry training, he became a rifleman and was sent overseas to Okinawa, Japan. It was then that he found what he really wanted to do. On many marches, David saw trucks parked by the side of the road. When he asked why the trucks were not being used, he was told that they were deadlined (not working) waiting for repair. He was frustrated because he wanted to be able to fix them. After 4 years in the infantry and reaching the rank of sergeant, he decided to reenlist. At the same time, he asked to switch his occupation to motor transport mechanic.

To qualify for his new occupation, David took the basic automotive maintenance course. He then began troubleshooting problems in jeeps, trucks, and trailers at Camp LeJeune, NC. David also used his training to help fix his friends' cars. In fact, they started calling him Jones, M.D. (for Mechanical Doctor). Because of his good work, David was promoted to shop chief, responsible for supervising several mechanics.

After 2 years at Camp Lejeune as a mechanic and another promotion, David went back to Okinawa as a maintenance chief. He scheduled all vehicles for maintenance and ensured the safety of the shop. Even though he was overseas, he was able to play his favorite sports—tennis and football—on base. One year later, he moved to the Marine Corps Logistics Base in Albany, GA, as an inspector. He traveled to all the Reserve units from Texas to the East Coast inspecting vehicles. During his 3 years in Albany, David took the motor transport staff noncommissioned officer (NCO) course. On the series of tests he took there, he achieved the highest individual average in the school's history and graduated with honors. David was recently promoted to gunnery sergeant and reassigned to Marine Corps Headquarters.

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ADVANCEMENT

Mechanics must know their vehicles. They need to have the technical skills needed to find out what is wrong and fix it. They must be able to figure out what is wrong with an automobile or truck from driver descriptions, written work orders, or visual inspection of a running vehicle. Good vision, sharp hearing, and hand-eye coordination are needed to spot minor flaws, detect the sounds of faulty operation, and make precise adjustments. Mechanics must also be able to disassemble, inspect, and repair the major systems, such as fuel, brake, transmission, and electrical systems.

After mastering the basic skills, the willingness to assume leadership roles helps automobile mechanics advance through the supervisory levels of this career. Knowing about many different types of vehicles, including trucks and heavy equipment, is an asset for advancement to vehicle repair supervisor. These senior managers are responsible for the repair and maintenance of all types of vehicles.

SPECIALIZATION

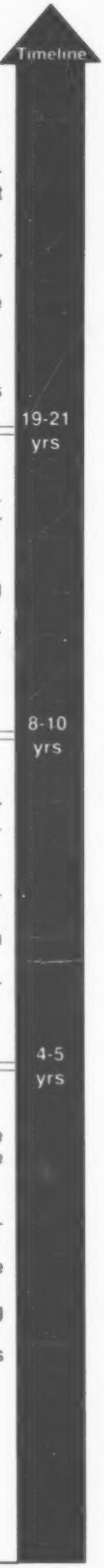
Depending on their assignment, automobile mechanics often develop specialized skills for working on one or more types of vehicles. A mechanic might specialize, for example, in repairing jeeps, autos, and light trucks; wrecker trucks and forklift equipment; or aircraft towing and ground support equipment.

TRAINING

The services provide apprentice auto mechanics with 6 to 13 months of basic and initial job training. It combines classroom and on-the-job instruction. Classroom instruction emphasizes shop procedures, basic repairs, and the use of manuals and repair diagrams. Experienced mechanics provide on-the-job training on a one-to-one basis. This training covers the use of hand tools, power tools, and test equipment and common procedures for repairing brakes, transmissions, carburetors, and fuel and electrical systems. Depending on the first job assignment, additional training may be given on a specific type of vehicle. Throughout their careers, auto mechanics may receive specialized training on many different vehicles. Advanced training is also available for mechanics to sharpen their troubleshooting and fault isolation skills. Shop supervisors may take courses that cover the latest auto and vehicle maintenance techniques.

During their careers, automobile mechanics learn supervisory skills through leadership training and job experience. This training continues through the vehicle repair supervisor level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

TYPICAL CAREER PATH



VEHICLE REPAIR SUPERVISOR

Successful shop supervisors may advance to direct repair operations for many different vehicles. At this level, they:

- Coordinate the activities of a major vehicle repair facility
- Identify ways to reduce costs for more effective programs
- Monitor repair orders for recurring problems
- Monitor the use of parts and supplies
- Ensure that proper records are kept on vehicles and shop personnel

SHOP SUPERVISOR

Qualified mechanics who show leadership potential may advance to become supervisors of repair shops. They:

- Give technical help and advice in troubleshooting difficult problems
- Conduct training on the newest maintenance procedures and techniques
- Design and layout work stations and equipment
- Assign and schedule work to meet deadlines
- Inspect and approve repaired vehicles

MECHANIC

By developing their skills and becoming familiar with different vehicles, mechanics take on troubleshooting and more difficult repairs. They:

- Isolate the causes of vehicle problems and determine repair needs
- Conduct on-the-job training for new mechanics in how to use tools and diagnostic test equipment
- Inspect alignments and adjustments of transmissions and electrical systems
- Prepare vehicle maintenance schedules
- Perform major repairs and engine overhauls

APPRENTICE MECHANIC

After initial job training, apprentice mechanics are assigned to repair shops, where they perform routine maintenance and repairs. At this level, they:

- Perform service on vehicles, following maintenance specifications
- Test vehicles for electrical problems and replace batteries and voltage regulators as needed
- Inspect and replace worn belts, hoses, and wiring
- Change oil and tune engines
- Repair or replace parts as directed on repair orders or by senior mechanics

BOILER TECHNICIANS

NAVY
COAST GUARD

Boiler technicians run the power plants that turn turbines and generators to drive ships. As a boiler technician, you run and maintain boilers and auxiliary equipment, such as pumps, turbines, and compressors. You begin your career operating and maintaining boilers under close supervision. As you gain experience, you take on more responsible duties, such as inspecting boilers and turbines and testing and setting safety valves. There are opportunities to advance to fireroom (boiler room) supervisor and perhaps to engineering assistant.

DUTY ASSIGNMENT

Boiler technicians are usually assigned to a ship's engineering department, where they work in the fireroom. Shipboard duty involves work anywhere on the high seas and at the ship's home port. Boiler technicians may also be assigned to shore duty to assist crews with repairs while ships are in port. While on shore duty, boiler technicians may also work in base power plants.

ADVANCEMENT

Since boilers are a vital part of the ship's power plant, boiler technicians must be alert to report unusual water levels and pressure readings on boiler gauges. A good performance record in standing watch (operating and monitoring the boiler operations while the ship is under way) is essential. Boiler technicians must learn preventive maintenance on all parts of the ship's propulsion system, including boilers, turbines, and auxiliary equipment. They also need to develop the technical skills to find the cause of an equipment malfunction and fix it. After mastering the basic skills, the willingness to assume leadership roles helps boiler technicians advance through the supervisory levels of this career.

Profile: Mike Gaynor

Mike Gaynor was living in an orphanage in Georgia when he decided to join the Navy. "I saw the Navy as a place to learn and a way to travel," he says. He enlisted under the delayed entry program while he was still in high school and entered the Navy the following winter.

Mike's initial job training taught him the basics of operating a boiler. His first assignment was on the KK *Vesole*, a destroyer with a manual boiler system. He started as a messenger learning to take pressure and temperature readings. As a burnerman, the next step, he ensured that the boiler pressure and fuel pressure were up. As a checkman, he maintained the water level in the boiler. Finally, he became the top watch in charge of his boiler section. Mike has repeated this process several times during his career. Since each ship's boiler system is different, he has had to learn a new system each time he was assigned to a new ship.

In his first assignment, Mike was promoted to petty officer third class. Having mastered a manual boiler system, he then went to school for advanced training in repairing and operating automatic combustion control machinery. Mike was assigned to shore duty at the San Diego Naval Station, CA. He worked in several shops repairing and checking valves and other parts. During this time, he was promoted to petty officer second class.

Mike then spent 4 years assigned to the destroyer USS *Blandy*. He worked his way up to top watch and also became engineering officer of the watch. Mike considers this his best assignment so far. "We were like a close-knit family," he says. On this tour, Mike made petty officer first class and got to see Europe, Africa, and the Middle East. Mike advanced to work center supervisor on his next ship, the aircraft carrier USS *America*. He was in charge of 25 boiler technicians and the two boilers and their equipment. He was also the top watch and chief of the watch when the ship was in port.

Now Mike is assigned to the Washington Navy Yard in Washington, DC, developing task inventories and occupational standards for Navy enlisted careers. Mike has enjoyed his time on board ship. "The hours can be long, I've worked hard," he says, "but I've learned a lot and I've been everywhere."

TRAINING

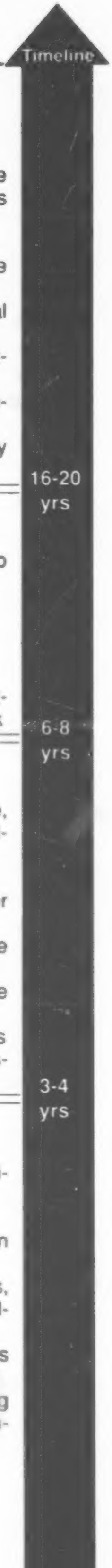
The services provide apprentice boiler technicians with 9 to 15 months of basic and initial job training. Training includes classroom instruction and on-the-job training in a shipboard fireroom. Classroom instruction in basic propulsion engineering concepts and procedures includes maintenance principles and procedures and the use of technical manuals, hand tools, and precision instruments. Training also emphasizes the operation of boiler components, such as pumps and compressors. Further training is given on the job by experienced boiler technicians and fireroom supervisors. Senior boiler technicians may receive advanced training in maintenance and repair of fireroom equipment, including blowers, governors, condensers, regulators, steam turbines, machinery controls, and distilling equipment. They learn to log water levels and steam pressures for manual and automated boilers while working from boiler control stations. Some courses also include techniques used in intermediate maintenance activities (such as shipyards).

During their careers, boiler technicians learn supervisory skills through leadership training and job experience. This training continues through the engineering assistant level with courses in management and administration. Typically, these courses address new technical references, personnel management, maintenance documentation, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in working with your hands and with machines, you may also want to consider a career in the closely related occupation of marine engine mechanic. Other related occupations—machinist and power plant operator—are described in the Machine Operator and Precision Work Occupations cluster in the Military Occupations section of this book.

TYPICAL CAREER PATH



ENGINEERING ASSISTANT

Engineering assistants manage and organize the operation and maintenance activities of a ship's engineering department. They:

- Administer long-range training and maintenance management programs
- Advise engineering officers of vessel operational limitations when equipment is being repaired
- Assist in managing the ship's engineering department
- Review equipment, material, and personnel records to predict future requirements
- Supervise fireroom inspection and decide on any needed corrections

FIREROOM SUPERVISOR

Experienced boiler technicians may advance to become fireroom supervisors. At this level, they:

- Oversee all maintenance and repair
- Conduct or assist in on-the-job training
- Give technical advice and help
- Prepare maintenance schedules and reports, noting the progress of maintenance and repair work

BOILER TECHNICIAN

As apprentice boiler technicians' skills increase, they take on more responsible duties. Boiler technicians:

- Inspect boilers, turbines, steam pipes, and water feed
- Instruct personnel in approved procedures and the use of engineering and technical manuals
- Help apprentice technicians install boiler furnace brickwork and insulation
- Adjust water level and pressure indicator gauges
- Test and set or overhaul safety valves and pressure relief devices

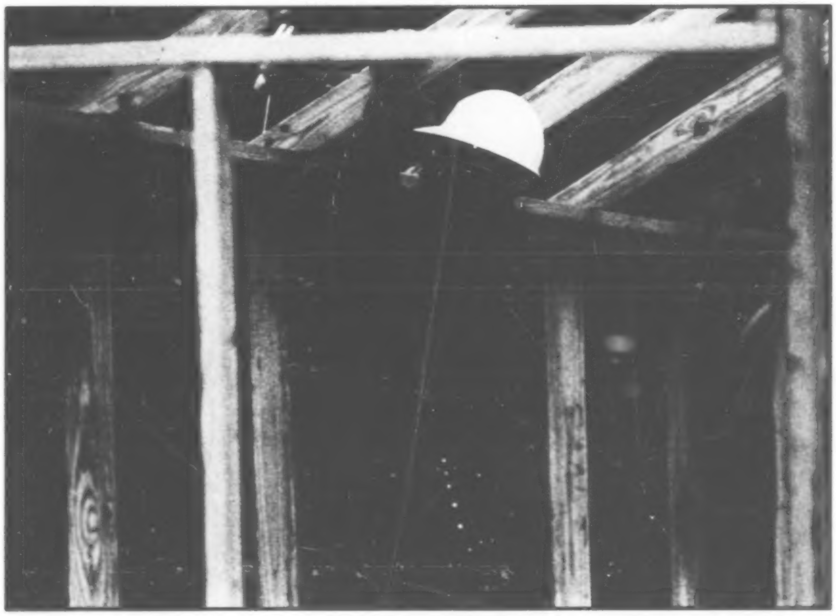
APPRENTICE BOILER TECHNICIAN

After initial job training, apprentice boiler technicians:

- Operate and perform preventive maintenance on boilers
- Disassemble, clean, grease, and lubricate valves, pumps, turbines, boilers, boiler fittings, and forced-air blowers
- Repair and align air, fuel, and water piping systems
- Test fuels, water, and lubricating oils for quality
- Stand watches and log pressure readings, being alert for abnormal operations and emergency conditions

CARPENTERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD



Carpenters help translate blueprints and drawings into finished structures. As a carpenter, you may make cabinets, lay floors, roof buildings, erect and finish walls, or build piers, bunkers, and other timber structures. You begin your career performing rough carpentry, such as framing walls and performing simple repairs. As you develop your skills, you may take on more responsibility and more difficult tasks. There are opportunities to advance to trades supervisor and perhaps to trades superintendent.

DUTY ASSIGNMENT

Most carpenters work on military bases, but the actual work site depends on the job. Carpenters may work in woodworking shops, inside a new building, or outdoors constructing temporary buildings and timber structures. Most carpenters work at large military bases in the United States, but there is also a good opportunity for overseas assignment maintaining buildings on military installations or working at temporary advanced-base sites used in training exercises or combat.

ADVANCEMENT

Carpenters are skilled craftspersons who must learn and master the use of tools of the trade—saws, squares, hammers, and power tools. They must also perform many different construction tasks, such as painting, roofing, masonry, and framing walls and floors. Carpenters are judged by the quality of their work and their ability to make decisions on how to complete a job. In order to advance, carpenters must be able to read work orders and estimate the time and materials needed to complete a job. After mastering the many different carpentry skills, the willingness to assume leadership roles helps carpenters advance through the supervisory levels of this career.

Profile: Frank Dalton

Frank Dalton worked in construction during his summer breaks from school. He found that he liked working with his hands. So when he joined the Air Force, he asked to sign on as a structural technician. Because of his previous experience, he was able to take a test that allowed him to bypass initial training and go directly to his first duty assignment after basic training.

Frank started as a carpenter's apprentice at Maxwell Air Force Base (AFB), AL. From there, he was sent to Korea, where he renovated buildings and built roads, shelters, and maintenance hangars. Looking back, he feels that this was one of his most interesting experiences in the military. "I really got to see how the people there lived." Back in the States at Seymour Johnson AFB, NC, he performed minor construction and maintenance, such as paneling, patching roofs, and replacing floor tiles. With this experience behind him, Frank then transferred to the planning section, where he learned to plan and construct buildings.

Frank's next assignments placed him as crew leader. At Keesler AFB, MS, he was promoted to staff sergeant and led a crew of carpenters who carried out maintenance for the base. At Rhein Mein AB, Germany, he was in charge of a crew that built a hobby shop, a squadron compound, a recreation center, and a communications facility. He then became the noncommissioned officer in charge (NCOIC) of a 3-person shop at the North Charleston Air Force Station, SC. "We did everything—roofing, plumbing, painting, maintenance, and renovation."

Promoted to technical sergeant, Frank became the NCOIC of carpentry shops, first at Homestead AFB and then at Hurlburt Field in Florida. At Homestead, his shop renovated the officers' open mess and the headquarters building, an improvement that won the base an award as the "Best Base in Tactical Air Command of the Air Force." At Hurlburt Field, his crew constructed 11 buildings, renovated the base marina, and rebuilt a Boy Scout camp as a community relations project. Frank is now on temporary duty assignment at Myrtle Beach AFB, SC, where his crew is moving and reconstructing an old hangar.

TRAINING

The services provide carpenters with 6 to 12 months of basic and initial job training. It combines classroom instruction and on-the-job experience. Classroom instruction includes the basics of carpentry and woodworking: reading blueprints, applying mathematical formulas, and using and maintaining hand and power tools. On-the-job training is conducted under the supervision of a more experienced carpenter on actual repair and construction projects. On these projects, carpenters gain experience in all carpentry skills, including performing general maintenance tasks, repairing floors and roofs, making forms for a foundation, and finishing doors and window frames. Crew leaders may take advanced training in basic supervision and planning work projects.

During their careers, carpenters learn supervisory skills through leadership training and job experience. This training continues through the trades superintendent level with courses in management and administration. Typically these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in construction work, you may also want to consider a career as a bricklayer and concrete mason, building electrician, or plumber and pipefitter. See the Construction Occupations cluster in the Military Occupations section of this book for descriptions of these and other construction occupations.

Timeline

TYPICAL CAREER PATH

TRADES SUPERINTENDENT

Trades superintendents supervise large construction and maintenance units. At this level, they:

- Plan personnel and equipment needs for construction and repair jobs
- Set up and carry out quality control standards and work procedures
- Plan work priorities and timetables
- Direct inspections of completed systems, structures, and facilities
- Develop training programs for construction workers and equipment operators

19-20 yrs

TRADES SUPERVISOR

Crew leaders who show skill and motivation may become trades supervisors who oversee the work of several construction trades, including electricians, plumbers, and other construction workers. They:

- Help plan repair and construction projects
- Coordinate construction and support unit operations
- Inspect completed or nearly completed projects
- Carry out training programs and assign trainers for new workers
- Prepare technical, work progress, and cost control records and reports

8-12 yrs

CREW LEADER

Skilled carpenters who show leadership ability may advance to lead carpentry crews. At this point, they:

- Assign jobs and help in work start-up
- Train new carpenters in tool and equipment use and carpentry operations
- Help in on-site construction and carpentry shop inspections
- Interpret drawings and blueprints to plan and lay out work
- Keep records of the time and materials spent on projects and predict future needs

4-6 yrs

CARPENTER

After initial training, carpenters are assigned to construction and maintenance units. Working under close supervision, they:

- Repair or build piers, timber bridges, bunkers, or temporary structures
- Make forms for pouring concrete and erect wood framing for buildings
- Repair floors and roofs using wood, tile, asphalt, and shingles
- Hang sheetrock or drywall to finish interior walls and ceilings
- Repair and install doors, windows, and cabinets and install locks and doorknobs

COMPUTER PROGRAMMERS

ARMY
NAVY
AIR FORCE
MARINE CORPS

A computer can solve problems in fractions of a second and store vast amounts of information, but it takes a programmer to make it work. As a programmer, you communicate with the computer using language it understands. You begin your career by writing and testing simple programs. As you gain experience, you learn to apply your skills to more difficult programming tasks. There are opportunities to advance to programming supervisor and perhaps to supervisor of an entire data processing facility.

DUTY ASSIGNMENT

Most programmers work on advanced computer equipment in large data processing centers. These facilities are usually in office settings, but centers may also be located in missile facilities, space command centers, or aboard ships. While there is some opportunity for overseas assignment, most computer programmers work at data processing centers in the United States.

ADVANCEMENT

Computer programmers need a high level of creativity and intelligence to write and test complex computer programs. Programmers must also have good math skills and the ability to think logically to write the codes that instruct computers. Since the smallest mistake can cause a program to fail, programmers must pay close attention to detail while coding and debugging programs. Keeping up on constantly changing computer technology and being able to work with many different computer systems are important for advancement.

After mastering basic programming skills, the willingness to assume leadership roles helps programmers advance through supervisory levels of this career. A familiarity with the entire range of computer operations (for example, telecommunications, data entry, and specialized equipment) is important to advance to the level of data processing supervisor. Data processing supervisors manage entire computer centers, including programming and computer operations.

Profile: Juan Delgado

When Juan Delgado joined the Army, he had been out of high school for 6 years. During this time, he had gone to college for 1 1/2 years and had served in the National Guard, but he needed something to get him started. So Juan decided to enlist.

Juan did not become a programmer/analyst immediately. During his first 4-year enlistment, he served as a cannon crewman, assistant gunner, and forward observer in the artillery at Fort Campbell, KY, and Camp Essayons, South Korea, where he moved up through the ranks to sergeant. When the time came for Juan to reenlist, he looked through the Army careers catalogue. The computer career field appealed to him most, so he asked permission to reenlist as a programmer/analyst. His request was granted, and the Army sent him to computer school to learn his new job.

At the 4-month computer school at Fort Benjamin Harrison, IN, Juan learned COBOL, systems analysis, problem solving, and the Army's job control language. He enjoyed the challenge of learning the latest technology.

Juan's first assignment in his new career field was at the Army's data processing center in Yongsan, Korea. For 2 1/2 years, Juan was the analyst in charge of the Standard Army Multi-Command Management Information Systems (STAMMIS). He also programmed in COBOL, worked with the Army's job control language, and, while analyzing problems and reporting them, learned the basics of technical writing. During this tour, he was promoted to staff sergeant.

From Korea, Juan went to his present assignment at the Army's Information Systems Engineering Command. Working specifically in quality assurance, he monitors the development of new computer systems and gives technical guidance. He also writes documentation, such as user's guides.

Juan enjoys following the developments of new technology in hardware, especially in microcomputers. "Programming is so complex no one can know it all," he says. "I like interacting with other programmer/analysts to share knowledge."

TRAINING

The services provide computer programmers with 6 to 18 months of basic and initial job training. It includes classroom instruction and practical exercises in programming and data processing.

Instruction stresses the different types of programming languages. These languages include operating systems (instructions that control computer operations), assembler, BASIC, COBOL, and FORTRAN. Hands-on exercises demonstrate the basic tools and techniques used to code, structure, and debug programs.

Training continues on the job under the direction of programmer/analysts and supervisors.

Experienced programmers and programmer/analysts may take advanced training in developing programs to automate manual budgeting and accounting procedures. Instruction emphasizes analysis techniques, such as flow diagrams and decision tables.

Throughout their careers, computer programmers may receive additional training in specific computer systems and computer programming languages. The type of advanced training depends on the skills needed in a duty assignment. For example, programmers assigned to technical, scientific, or special purpose programming may receive training in special programming languages. This training covers methods for writing input-output routines (data entry and reports) and subprogram call and return statements (special instructions for repetitive program calculations). Programmers often receive training in new computer systems directly from the manufacturer.

During their careers, computer programmers learn supervisory skills through leadership training and job experience. This training continues through the level of data processing supervisor with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in working with computers, you may also want to consider a career as a computer systems analyst, computer operator, or computer equipment repairer. See the Administrative Occupations cluster, the Engineering, Science, and Technical Occupations cluster, and the Electronic and Electrical Equipment Repair Occupations cluster in the Military Occupations section of this book for descriptions of these and other related military occupations.

TYPICAL CAREER PATH

Timeline

DATA PROCESSING SUPERVISOR

Data processing supervisors may manage entire data processing organizations, including programmers and computer operators. They:

- Plan and direct computer operations and programming
- Assign projects, set priorities, and monitor work load
- Develop budgets, track expenses, and predict equipment requirements
- Develop staff training programs

18-21 yrs

PROGRAMMING SUPERVISOR

Skilled programmer/analysts who show leadership ability may advance to become programming supervisors. At this level, they:

- Assign staff and organize teams for major projects
- Help programming staff with technical problems
- Review and approve proposed system and program designs
- Train or direct the training of new programmers
- Check user requests and set up project budgets and deadlines

9-12 yrs

PROGRAMMER/ANALYST

Experienced programmers may advance to become programmer/analysts who design computer applications for military organizations. Programmer/analysts:

- Meet with supervisors and system users to determine system objectives
- Define inputs, outputs, and data elements for proposed systems
- Write system design and programmer instructions
- Test and debug programs using test data and analysis techniques
- Put new programs and systems into operation

4-6 yrs

PROGRAMMER

After initial job training, programmers work with more experienced staff developing routine programs. Programmers:

- Write simple programs using standard, prewritten program segments
- Enter programs using computer terminal input devices
- Prepare documentation for users, computer operators, and other programmers
- Code programs into computer language to perform needed actions
- Help prepare, edit, and test programs

ELECTRONIC INSTRUMENT REPAIRERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Profile: Catherine Glidden

Petty Officer First Class Catherine Glidden joined the Navy for travel and an education. The Navy recommended advanced electronics to her because she scored highest in that area on the ASVAB.

Catherine took initial job training courses in electricity and electronics, intermediate avionics, advanced electronics, and ARN52 (navigational gear). She then went on her first duty assignment to Guantanamo, Cuba, where she tested, maintained, and repaired communication navigation gear. There she met her future husband, also an aviation electronics technician in the Navy.

Catherine's next assignment was in Rota, Spain, where she worked on A-3 and P-3 aircraft and maintained electronic countermeasures gear for VQ-2 (fleet air reconnaissance) squadron planes. She worked on control boxes, switching units, and antennae displays. She was also an inspector responsible for checking repaired gear and reviewing the work of others. "When I was in Spain, I bought a Eurail pass and toured Norway, Belgium, Sweden, Holland, France, Germany, Austria, and England," says Catherine.

After Spain, Catherine trained as an instructor and was then assigned to the Norfolk Naval Air Station, VA, for further on-the-job training. She received her certification, and now, with only 11 years in the Navy, she teaches electronic assembly repair courses (basic and advanced), a supervisor's course, and an instructor's certification course. She also travels to training sites in the southeastern United States to recertify sites and instructors. She enjoys teaching. As she says, "Before, I learned a lot through school and strengthened my technical skills. Now, as an instructor, I'm strengthening my communications skills."

Catherine was not only the first female instructor but also the first woman at her present detachment. She is one of only 10 aviation electronics technicians and the only female aviation electronics technician ever to have reached the "A" level of certification ("A" is the highest of six levels). Catherine has no problem being first. As she says, "I strive to do the best I can in every job I do."

Precise electronic instruments are vital in military communications, aircraft navigation, and weapons targeting. They are also used in medical research, weather forecasting, and electronic warfare. As an electronic instrument repairer, you diagnose and repair malfunctions on one type of electronic instrument. You begin your career performing routine maintenance and repair on a single instrument. As you gain experience and skill, you may advance to work on more than one instrument, doing more complicated repairs and helping others solve complex problems. There are opportunities to advance to shop supervisor and perhaps to electronic maintenance superintendent.

DUTY ASSIGNMENT

Electronic instrument repairers work in electronic repair shops all over the world. The military uses electronic devices in all areas, so repairers are found working aboard ships or aircraft and at most military installations. The instruments that repairers learn to fix may determine their duty assignments. For example, repairers who work on flight control instruments are usually assigned to the electronics section of an aircraft squadron or aircraft maintenance unit. Repairers who work on biomedical equipment (used in medical testing and research) are usually stationed at large medical facilities.

ADVANCEMENT

Electronic instrument repairers diagnose problems and make repairs to state-of-the-art electronic instruments. To do this, they must understand the electronic principles behind the workings of highly technical equipment. They also need skills in reading schematic diagrams and using test instruments to find faulty parts. To advance, repairers must develop the analytical skills needed to solve complex repair problems and expand their knowledge of related electronic equipment. After mastering the basic skills, the willingness to assume leadership roles helps electronic instrument repairers advance through the supervisory levels of this career.

SPECIALIZATION

From the time they begin their training, electronic instrument repairers specialize in one type of complex equipment. Specialties include avionic systems (electronic systems on aircraft), biomedical equipment (medical diagnostic or research), electronic communications equipment, and electronic warfare systems.

TRAINING

The services provide electronic instrument repairers with 9 to 24 months of basic and initial job training. It combines classroom instruction and intensive on-the-job training. The classroom instruction consists of two courses. The first covers basic electrical and electronic theory and principles. Trainees also learn how to use and care for electronic tools, instruments, and equipment. The second course gives details about the specific equipment the repairer has selected as a specialty. For example, biomedical equipment repairers learn about X-ray equipment, laboratory instruments, and patient monitoring systems. During on-the-job training, repairers learn how to inspect, maintain, and perform simple, routine repairs on electronic instruments. Advanced classroom training for senior repairers covers advanced electronics, troubleshooting techniques, and new repair procedures.

During their careers, electronic instrument repairers learn supervisory skills through leadership training and job experience. This training continues through the level of electronic maintenance superintendent with courses in management and administration. Typically, these courses address budgeting, personnel management, repair shop operations, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in electronic instrument repair, you may also want to consider a career as a radio equipment repairer, computer equipment repairer, or electronic weapons systems repairer. See the Electronic and Electrical Equipment Repair Occupations cluster in the Military Occupations section of this book for descriptions of these and other related military occupations.

TYPICAL CAREER PATH

Timeline

ELECTRONIC MAINTENANCE SUPERINTENDENT

Highly qualified shop supervisors may advance to plan and manage electronic systems maintenance facilities. They:

- Plan for needed personnel, equipment, parts, and supplies
- Set up quality control guidelines and maintenance and repair standards
- Conduct safety and quality control inspections
- Develop and write technical and administrative reports and orders
- Develop training programs and procedures

19-21 yrs

SHOP SUPERVISOR

Skilled instrument repairers who show leadership ability may become supervisors of electronic repair shops. At this level, they:

- Schedule and make work assignments
- Coordinate repair and support activities to meet work deadlines
- Give technical guidance in electronic system maintenance and repair
- Inspect completed repairs
- Conduct training programs and assign trainers for new repairers

10-13 yrs

SENIOR REPAIRER

As their skills increase, electronic instrument repairers take on more responsibility and perform more complicated repairs. Senior repairers:

- Set up and run electronic testing equipment and machines
- Align and calibrate (adjust) testing equipment and instruments
- Interpret diagrams and use troubleshooting techniques to find faulty parts or wiring
- Test repaired instruments and systems using probes and oscilloscopes (devices that measure variations in electrical current)
- Replace faulty parts, such as loose wires and printed circuit boards (prewired electrical circuits)

4-8 yrs

ELECTRONIC INSTRUMENT REPAIRER

After initial job training, electronic instrument repairers perform routine maintenance and simple repairs on electronic instruments. Working under close supervision, they:

- Use wiring diagrams to find faulty parts and test electronic instrument components (parts)
- Check for faulty wiring and connections using probes and other test instruments
- Replace parts using common and special hand tools
- Repair printed circuits and electric connectors using precision soldering tools
- Clean and maintain electronic testing equipment and instruments

ELECTRONIC WEAPONS SYSTEMS REPAIRERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Most modern weapons—from ballistic missiles to field artillery—have electronic parts. As an electronic weapons systems repairer, you perform electrical, mechanical, and electronic repairs on one type of weapons system. You begin your career performing maintenance and repairs under close supervision. As you gain experience and skill, you work more independently and perform more complicated repairs. There are opportunities to advance to shop supervisor and perhaps to maintenance superintendent.

DUTY ASSIGNMENT

Electronic weapons systems repairers work in specialized maintenance and repair units. These units may be part of the infantry, the artillery, an air squadron, or a ship's crew. Repairs are generally performed in specially equipped workshops, but, depending on the type of weapon, repairers may also work in aircraft hangars, missile silos, or outdoors to inspect, remove, and reinstall electronic parts. Electronic weapons systems repairers are assigned wherever military weapons are found. There is good opportunity for overseas assignment.

ADVANCEMENT

Modern weapons systems are complex; they include electronic guidance and control modules as well as mechanical and electrical parts. To find and fix a problem, repairers must understand how all these parts work together. They need to be able to follow maintenance and repair guides precisely and know how to use special electronic test instruments. They must become skilled at working with hand tools to adjust mechanical parts and replace defective wiring. To advance, repairers must develop the analytical skills needed to diagnose the cause of system failure. After mastering the basic skills, the willingness to assume leadership roles helps electronic weapons systems repairers advance through the supervisory levels of this career.

Profile: Fred Quincy

Master Sergeant Fred Quincy sees himself and the other airborne electronic weapons systems repairers as a "special breed." They like to work independently, and they enjoy a challenge. Even though they may work on only a few systems in their careers, they are constantly learning. As Fred says, "We never see the same problem twice."

For his first 11 years in the Army, Fred worked mainly on one weapon system: the Chaparral. His training on this system began soon after he joined the military. During a series of assignments in the United States and Germany, he advanced from technician to assistant Chaparral system mechanic to senior mechanic. He was also promoted through the ranks to staff sergeant. As senior mechanic, he reported to the Commander on weapon status and supervised training in maintenance and troubleshooting. He also monitored the stock of weapons and made sure that forms and the log book were kept up to date. In one assignment, he was the noncommissioned officer-in-charge (NCOIC) of projects to prepare a directory for training and to develop a mechanic's manual for the Chaparral system.

At this point in his career, Fred felt that he needed to get experience in another system, so he requested training in the Vulcan weapon system. He also requested parachute training—something he had always wanted to do. Both requests were granted. Fred is proud of the "wings" on his uniform that show that he is parachute qualified. He earned them when he was 32 years old, 12 years after he joined the military.

Fred spent the next several years as a senior Vulcan mechanic. Now, with several years of Army experience behind him, he is at Fort Bragg, NC, with the 82nd Airborne, a rapid deployment force. He is maintenance control NCOIC and yard master in charge of all missile support for the division. He supervises over 130 men and controls the work flow of jobs on several electronic weapons systems. Since the division must be ready to deploy at a moment's notice, he and his crew ensure that the electronic weapons are always ready to go.

SPECIALIZATION

Electronic weapons systems repairers usually specialize in one or more weapons systems. They may specialize in:

- Antiaircraft weapons used to protect military positions from attacking aircraft
- Ballistic missiles used for intercontinental (long-range) warfare
- Artillery used for conventional land-based warfare
- Aircraft weapons used for air-to-ground and air-to-air combat

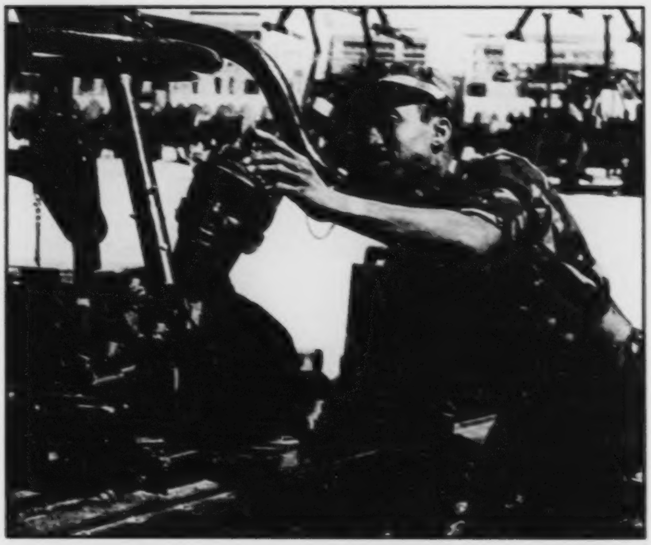
TRAINING

The services provide electronic weapons systems repairers with 9 to 24 months of basic and initial job training. It combines classroom instruction and on-the-job training. Classroom instruction covers basic mechanical, electrical, and electronics theory and principles. It also includes hands-on training in a particular weapons system and in the use of special tools. On-the-job training conducted by senior repairers and shop supervisors emphasizes using technical guides for performing maintenance and repair. Early in their careers, repairers typically return to the classroom for advanced training. These courses help them sharpen their troubleshooting skills and learn maintenance and repair procedures for replacement systems or major equipment modifications. In some cases, repairers return to the classroom for training in other weapons systems.

During their careers, repairers learn supervisory skills through leadership training and job experience. This training continues through the maintenance superintendent level with courses in management and administration. Typically, these courses address budgeting, personnel management, repair shop operations, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in electronic and electrical equipment repair, you may also want to consider a career as a radar and sonar equipment repairer, aircraft electrician, ship electrician, electronic instrument repairer, or computer equipment repairer. See the Electronic and Electrical Equipment Repair Occupations cluster in the Military Occupations section of this book for descriptions of these and other related military occupations.



TYPICAL CAREER PATH

Timeline

MAINTENANCE SUPERINTENDENT

Highly qualified shop supervisors may advance to manage electronic weapons systems maintenance units. They:

- Develop training programs and set training priorities
- Help officers plan for maintenance unit personnel and material needs
- Set work priorities and coordinate maintenance and support unit activities
- Develop quality control procedures and conduct maintenance inspections
- Oversee the preparation of inspection reports and personnel and technical records

18-20 yrs

SHOP SUPERVISOR

Experienced repairers who show leadership ability may become shop supervisors in electronic maintenance units. At this level, they:

- Schedule and make work assignments
- Inspect repaired electronic weapons systems
- Review maintenance and repair logs for accuracy
- Give technical assistance to shop personnel solving malfunctions in complex weapons systems
- Assign trainers to instruct new electronic weapons systems repairers

9-12 yrs

SENIOR REPAIRER

As their skills increase, repairers perform more difficult repairs. Senior repairers:

- Set up and run electronic test and weapons system support equipment
- Install and calibrate (adjust) guidance, telemetry, and electronic fire control subsystems
- Use troubleshooting techniques to find faulty parts and causes for system breakdowns
- Use electronic test equipment and performance analyzers to test repaired systems and subsystems
- Train new repairers and help with difficult system repairs

4-7 yrs

WEAPONS SYSTEMS REPAIRER

After initial training, electronic weapons systems repairers work under close supervision performing simple electronic repairs and routine maintenance. At this level, they:

- Read maintenance manuals and wiring diagrams to find system parts and subassemblies
- Replace sights, gyroscopes (stabilizing devices), printed circuit boards (prewired electrical circuits), and other parts using special hand tools
- Use electronic equipment and test probes to check missile, aircraft, and other fire control and guidance systems
- Repair mounts, launchers, and platforms for computer-controlled guns, torpedoes, artillery, and guided missiles

FOOD SERVICE SPECIALISTS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

The military serves thousands of meals each day in dining halls, aboard ships, or in tents in the field. As a food service specialist, you help prepare these meals: you may bake the bread, cut the meat, prepare the main courses, or make the sandwiches. You begin your career by preparing food under the close supervision of experienced cooks and chefs. As you gain experience, you may plan meals and order supplies. There are opportunities to advance to chef and perhaps to food service supervisor.

DUTY ASSIGNMENT

Food service specialists work in clean, sanitary kitchens and dining halls on military bases and ships. They may work in a galley preparing food for a small unit, in a hospital cafeteria, or in a large dining hall where several hundred or several thousand people are served at each meal. Food service specialists may also work under field conditions preparing and serving meals outside in large tents. Most food service specialists work at military bases in the United States, but there is good opportunity for overseas assignment. Food service specialists are likely to work with civilian employees sometime during their careers.

ADVANCEMENT

The quality of the food prepared for service members affects their health and morale. Food service specialists need to make an extra effort to see that the food they prepare is appetizing and nutritious. To do this, they must master cooking meals using standard recipes. They must also understand the characteristics and nutritional values of ingredients so that they can adjust recipes for large or small volumes and plan menus. At supervisory levels of the career, food service specialists also need to master the basics of managing a food service operation, such as ordering supplies and properly storing food. After mastering the basic cooking skills, the willingness to assume leadership roles helps food service specialists advance through the supervisory levels of this career.

Profile: Jim Johnson

Jim Johnson joined the Navy right after high school. He and a friend joined the Navy to travel and to learn a trade. Jim found his career in his first assignment in Bainbridge, MD, as a seaman apprentice: after spending part of his tour working in the mess hall, he discovered that cooking was what he wanted to do. From Bainbridge, he was assigned to the USS *Waldron* in Norfolk, VA, where he worked in the ship's galley.

Jim reenlisted because the Navy gave him the opportunity to go to cooking school, where he learned menu planning and nutrition and improved his cooking skills. After school, he spent a year and a half in the bakery at the Naval Hospital in Guam. From Guam he went to Vietnam, where he supervised a team of food service specialists providing meals to tugboat crews. By the end of his tour, Jim had been promoted to petty officer first class.

Jim spent the next 3 years managing the inventory of a commissary store. He was not sure if his career in the Navy was going anywhere, but after some friendly advice from his Chief, he decided not to leave. His decision paid off. During his next assignment aboard the USS *O'Callahan*, he was in charge of running the entire mess, something he had always wanted. He was also promoted to chief petty officer. Jim says the most important day of his career was the day he "put on the hat." (The lower ranks, Jim explains, wear sailor caps; only chiefs may wear "the hat.")

After making chief, Jim spent 3 years as an instructor in the Navy cooking school in San Diego. He and his fellow instructors won first place in the San Diego Culinary Show. On Saturdays, Jim ran a cooking school for Explorer Scouts. By the end of this assignment, Jim had been promoted to senior chief.

Jim has spent the past 4 years as food services supervisor on several ships. On the USS *New Orleans*, he managed a 35-person staff that fed 580 crew members and, at times, 1,800 Marines (nearly 7,000 meals a day). Aboard his last ship, the USS *Wadsworth*, he went on a 7-month cruise of the South Pacific, with stops in Hawaii, Guam, Korea, Hong Kong, the Philippines, Australia, New Zealand, Tonga, and Samoa.

SPECIALIZATION

While food service specialists typically begin as kitchen workers, they may specialize as bakers, butchers, or cooks. Depending on the military service, they may also spend their careers preparing special meals for hospital patients. These meals, which require special attention, are usually ordered by a physician or a dietitian to meet a patient's special need for low-calorie or salt-free food.

TRAINING

The services provide cooks with 10 to 18 months of basic and initial job training. It combines classroom and on-the-job training. Classroom training focuses on the basics of kitchen operations, sanitation, food storage, and the use of standard and special diet menus and recipes. Hands-on exercises at the school involve preparing and cooking standard menu meals. Intensive on-the-job training in preparing, arranging, and serving is given by experienced workers and chefs. Most chefs return to school for advanced training in food production and management of a food service facility. Courses may also be taken in specialized cooking, such as preparing gourmet meals, baking using advanced techniques, or cooking for pilots and flight crews.

During their career, food service specialists learn supervisory skills through leadership training and job experience. This training continues through the food service supervisor level with courses in pricing, nutrition, accounting, sanitation, inventory control, and personnel management.

RELATED MILITARY OCCUPATIONS

If you are interested in a service career where you work closely with others, you may also want to consider other occupations such as Lodging Specialist or Payroll Specialist. See the Administrative Occupations Cluster for descriptions of these and other related Military Occupations. The Service Occupation Cluster may also contain related military occupations.

Timeline

TYPICAL CAREER PATH

FOOD SERVICE SUPERVISOR

Highly qualified chefs may advance to direct and control large food service facilities. Food service supervisors:

- Set food service standards, policies, and work priorities
- Plan and develop food service training programs
- Inspect food service facilities and evaluate work procedures
- Plan and prepare budgets and monitor food service expenses
- Determine personnel, equipment, and food supply needs
- Prepare standard operating procedures and administrative reports on food service activities

15-21 yrs

CHEF

As their skills in food service increase, cooks take on more responsibility. As chefs, they:

- Plan and prepare standard and dietetic food menus and recipes
- Direct kitchen staff in a food serving facility
- Prepare work schedules and assign food service duties
- Set food serving procedures and plan layouts for dining areas
- Determine food and supply needs and prepare order forms and records
- Conduct training classes and assign trainers to new cooks

7-13 yrs

COOK

After initial training, food service specialists begin their careers working as cooks. Working under the supervision of experienced chefs, they:

- Receive, inspect, and store beverages, food items, and food service supplies
- Cook meat, fish, poultry, and vegetables
- Bake cakes, pies, bread, and pastries
- Make soups, salads, and sandwiches
- Serve food in a hospital, dining hall, field kitchen, or aboard ship
- Clean dining areas, kitchen utensils and equipment

INFANTRYMEN

ARMY
MARINE CORPS

As an infantryman, you live with a challenge. You learn to push yourself to do things you never thought possible. Your main focus is on teamwork, discipline, and physical conditioning. You begin by learning to read maps, fire weapons, and prepare for enemy attacks. By demonstrating leadership skills, there are opportunities to advance to platoon sergeant and perhaps to company/battalion sergeant.

DUTY ASSIGNMENT

Infantrymen are most often assigned to infantry units at military bases in the United States, but many are stationed in Western Europe and the Pacific Islands. Not all assignments for infantrymen are with infantry units; at some time in their career, experienced infantrymen are usually assigned to other positions. The most popular assignments include recruiter, drill instructor, and headquarters staff.

ADVANCEMENT

The nature of combat calls for infantrymen to be able to take charge and lead squad members to reach their goals. Good leadership skills are the key to advancing in the infantry. To advance, infantrymen must show that they could motivate and lead others in combat. They must begin developing these skills at basic training and apply them by leading the men of their squad or platoon in exercises and maneuvers. The willingness to assume leadership roles and take on additional responsibilities helps an infantryman advance through the supervisory levels of this career.

Profile: Michael Fry

As a civilian, Staff Sergeant Michael Fry had a good job as a pipe layer, but his work was the same every day. Mike joined the Marines because, as he puts it, "I was looking for a challenge and wanted to go different places and do different things." More importantly, Mike says, "I wanted to belong."

For Mike, teaching other Marines the skills he has learned has been the most important part of his infantry career. He believes that leadership and training are the basic roles of all noncommissioned officers (NCOs). During his career, Mike has actively sought assignments that allow him to share what he has learned.

During his initial infantry training, Mike was one of 10 Marines selected for barracks duty. Assigned to the Marine Barracks in Norfolk, VA, for a year, his squad provided security for the many naval installations in that area. From Norfolk, Mike went to marksmanship school at the Dam Neck Rifle Range. He did so well that the school asked him to stay on for a year as an instructor.

When Mike was sent to Okinawa as part of the 3rd Marine Brigade, his experience at the rifle range qualified him to become company armorer in charge of the company's small weapons. While in Okinawa, Mike was promoted to sergeant and volunteered for duty as drill instructor. The following year he recalls as the most rewarding of his career. "I was proud to be able to take someone off the streets and turn him into a Marine," he says. While a drill instructor, he also taught water survival to new recruits. Mike spent the next 3 years as a platoon sergeant in Hawaii training 40 Marines on land and on ship. He led the platoon in many different training exercises and on several cruises.

Mike is currently an instructor at the Marine Corps Officer Candidate School in Quantico, VA, where he trains college students who will one day become officers. He also works at the NCO school teaching leadership to other noncommissioned officers. Mike knows that he is due for another assignment in the near future and says he and his family are trying to decide where they want to go.

SPECIALIZATION

Infantrymen specialize in parachute jumping to qualify for assignment to an airborne division or in special battle tactics to qualify for assignment to a ranger battalion.

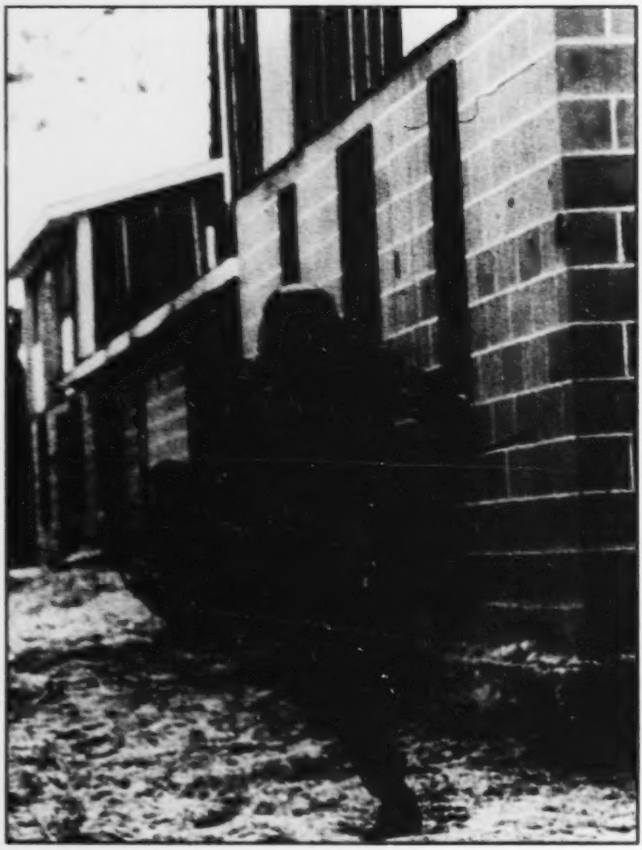
TRAINING

The services provide infantrymen with 6 to 12 months of basic and advanced infantry training. Following basic training, they continue to develop infantry skills. They learn about weapons, map reading, military law, and hand-to-hand combat techniques. They also undergo a tough physical conditioning program. Advanced training is usually given in specific weapons, such as mortars, machine guns, and truck-mounted weapons. Specialized training is also available in parachute jumping and special battle tactics.

As platoon sergeants, infantrymen take training in leading an infantry platoon. They learn about infantry combat operations, leadership, communications, and information gathering. Company/battalion sergeants take advanced training in planning and directing infantry operations. They learn about weapons, military tactics, unit readiness, and effective leadership.

RELATED MILITARY OCCUPATIONS

If you are interested in a combat career, you may also want to consider a career in the special operations forces or as an artillery crew member, combat engineer, or tank crew member. See the Combat Specialty Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.



TYPICAL CAREER PATH

Timeline

COMPANY/BATTALION SERGEANT

Company/battalion sergeants plan and direct the several platoons that make up an infantry company or battalion. Typically, they:

- Plan and conduct training programs
- Help decide how and when troops and equipment will be used
- Supervise operation of the unit command post
- Prepare situation briefings, combat orders, and other reports

17-20 yrs

PLATOON SERGEANT

Qualified squad leaders are promoted to supervise platoons, each consisting of several squads. At this level, they:

- Supervise a rifle, machine gun, or other infantry group
- Receive and give combat or training exercise orders
- Help develop battle plans
- Coordinate the movement of troops, supplies, and weapons
- Direct the storage and issue of ammunition

7-8 yrs

SQUAD OR FIRE TEAM LEADER

Infantrymen who show leadership potential may become squad leaders of small groups of infantrymen. Squad or fire team leaders:

- Motivate and give on-the-job training to new infantrymen
- Coordinate the squad's collection of information about the enemy and the battlefield
- Read maps and photographs taken from aircraft to locate enemy forces
- Request artillery or aircraft support fire
- Carry out combat or training exercise orders

3-4 yrs

INFANTRYMAN

After initial job training, infantrymen train and take part in combat exercises. They:

- Fire and maintain rifles, machine guns, and other weapons
- Stand watch at observation posts to observe enemy troop movement
- Stand watch at roadblocks and man bunkers and gun positions
- Drive trucks to transport troops, weapons, and supplies
- Place and arm antipersonnel and antitank mines

This career is open only to men.

MACHINISTS

ARMY
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AIR FORCE
MARINE CORPS

Machinists make engine parts so precise that their quality is measured to one one-thousandth of an inch. As a machinist, you make and repair parts for mechanical equipment, such as engines and generators, to keep them in running condition. You begin your career learning to use lathes, grinders, drill presses, and other metalworking machines under close supervision. As your skills develop, you may also learn the art of tool and die making and how to plan machining jobs and lay out work materials. There are opportunities to advance to machine shop supervisor and perhaps to mechanical maintenance superintendent.

DUTY ASSIGNMENT

Machinists usually work in a machine shop that is part of a larger maintenance organization. Depending on the service, machine shops may be part of an aircraft maintenance unit, a ship tender, or a vehicle repair and maintenance unit. Machinists may also be assigned to the maintenance section of a large combat unit, where they work with mobile equipment during field exercises. Machinists are needed in units all over the world, so there is good opportunity for overseas duty.

RELATED MILITARY OCCUPATIONS

If you are interested in metalworking, you may also want to consider a career as a welder, shipfitter, or sheet metal worker. See the Machine Operator and Precision Work Occupations cluster in the Military Occupations section of this book for descriptions of these occupations. Other related occupations may be found in the Vehicle and Machinery Mechanic Occupations cluster in the Military Occupations section.

Profile: Nancy Pruitt

Staff Sergeant Nancy Pruitt has enjoyed her 10 years on active duty. She says her Army career has provided her the opportunity "to travel, meet different people, learn the latest technologies, and just have fun."

Nancy joined the Army Reserves for training so she could do something different from her civilian job as a clerk typist. After basic training, she went to Fort Sam Houston, TX, for training as a medical service technician. For a year, she worked several weekends a month with her Reserve unit; then she volunteered for active duty. "I enjoyed my time on duty, and I saw the Army as a place to get ahead," she explains.

When Nancy joined the Active Army, she asked to receive training as a machinist. She thought the work would be challenging and different and would allow her to prove herself. She went through initial training at Aberdeen Proving Ground, MD, where she learned the basic skills required of all machinists. Her first assignment was at Fort Eustis, VA, where she worked in the maintenance company, helping make repairs to everything from radios to helicopters. She was able to learn her trade quickly and became familiar with some of the other occupations in the maintenance shop.

At Fort Eustis, VA, Nancy also worked for a year in her second specialty as a medical technician. She was then assigned to a maintenance company in Korea for a year, where she was promoted to sergeant. She returned to the States as a shop foreman in the services section of an armored division at Fort Knox, KY. In this position, she supervised a crew that repaired jeeps, tanks, and other armored equipment.

Nancy has been assigned to Aberdeen Proving Ground for the past five years as an instructor and noncommissioned officer in charge of student control. In addition to teaching metalworking courses, she processes students entering training and assigns them to their various classes. Nancy was recently promoted to staff sergeant and looks forward to being one of the top-ranking females in the maintenance field. When asked about being a female in a nontraditional job, Nancy replies, "I like the challenge of being the only female in the unit."

ADVANCEMENT

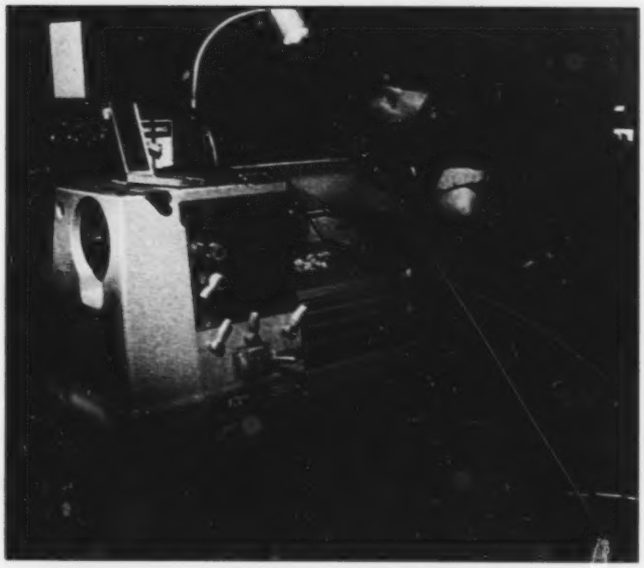
Because machinists are called on to make precision parts for sophisticated equipment, they need to develop an attention to detail and craftsmanship not required in many jobs. They must master the methods of crafting various parts, learn the use and properties of different metals, and develop skill in operating the many different machines in a shop. Learning to read blueprints and visualize parts from technical instructions is important in the early part of this career. Pursuing civilian courses in mathematics or applied sciences will help a machinist develop these skills.

After mastering the basic skills, the willingness to assume leadership roles helps machinists advance through the supervisory levels of this career. Learning about other occupations, such as mechanics, increases a machinist's chances for promotion since superintendents manage entire maintenance units.

TRAINING

The services provide machinists with 6 to 9 months of basic and initial job training. It includes both classroom and on-the-job instruction. Classroom instruction includes the basics of metalworking, including the properties of metals and the use of machine tools, such as lathes, drill presses, and milling machines. Class work also includes training in interpreting blueprints and using precision measuring devices. Expert machinists direct on-the-job training on each machine tool and instruct new machinists in planning, laying out, and completing machining jobs. Advanced training is available for senior machinists interested in more complex machining techniques and the art of tool and die making.

During their careers, machinists learn supervisory skills through leadership training and job experience. This training continues through the mechanical maintenance superintendent level with courses in management and administration. Typically, these courses address budgeting, personnel management, machine shop operations, and training program development.



TYPICAL CAREER PATH

Timeline

MECHANICAL MAINTENANCE SUPERINTENDENT

Machine shop supervisors may advance to plan and direct activities of entire mechanical maintenance units. Superintendents:

- Plan personnel needs and organize placement of equipment in the shop
- Develop training programs and procedures for shop personnel
- Set up programs to ensure quality work products
- Manage unit administration, including filing, preparing reports, and maintaining publications that contain part descriptions or work procedures

16-20 yrs

MACHINE SHOP SUPERVISOR

Skilled senior machinists who show leadership ability may become supervisors of machine shops. At this level, they:

- Plan and schedule projects to use personnel and equipment efficiently
- Conduct training programs and assign trainers to new machinists
- Oversee shop operations
- Inspect finished machined parts and work pieces for quality
- Design, make, and repair special machine tools, including dies and jigs

7-8 yrs

SENIOR MACHINIST

By mastering basic machining skills and abilities, machinists can become senior machinists. They:

- Assign work to machinists to meet work deadlines
- Conduct on-the-job training and show new workers how to operate machines
- Interpret work orders and specifications and help with complex machine jobs
- Perform difficult machine setup and operation for precision work
- Lay out, mark, and make metal and nonmetal parts

3-5 yrs

MACHINIST

After initial job training, machinists learn to use metalworking machines to make and repair metal parts. Working under close supervision, they:

- Read blueprints, sketches, diagrams, and work specifications
- Measure and mark parts and materials for machining
- Lay out common work pieces and set up standard machine tools
- Operate lathes, grinders, shapers, and milling machines
- Test completed work using precision devices, such as gauges, calipers, and micrometers

MARINE ENGINE MECHANICS

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COAST GUARD

Marine engine mechanics keep the ship's engines running. As a marine engine mechanic, you maintain and repair ship or small boat engines, propulsion machinery, and other shipboard mechanical equipment. You begin your career performing routine maintenance and repairs under close supervision. As you gain experience, you take greater responsibility and perform more difficult repairs. There are opportunities to advance to engine room supervisor and perhaps to marine engine superintendent.

DUTY ASSIGNMENT

Marine engine mechanics work aboard ships or at land-based repair centers. Shipboard duty may involve work anywhere on the high seas or at the ship's home port. A large number of marine engine mechanics work on launches (small boats) and amphibians (vessels able to move on water and over land). Some mechanics work on cutters that patrol the coastal waterways.

ADVANCEMENT

Marine engine mechanics must understand different kinds of equipment. They must have the technical skills needed to find the cause of a malfunction and fix it. Good eyesight, sharp hearing, and hand-eye coordination are important since mechanics must be able to spot damaged or broken parts, detect the sounds of faulty operation, and make precise adjustments. They must be able to read blueprints and follow standard maintenance procedures. Marine engine mechanics must also have a good job performance record in standing engine room watches. To do this well, they must be alert for unusual conditions and understand emergency procedures. After mastering the basic skills, the willingness to assume leadership roles helps marine engine mechanics advance through the supervisory levels of this career. The opportunity for advancement is usually increased by experience in working on more than one type or class of vessel.

Profile: George Monch

George Monch grew up in Cape May, NJ, home of the Coast Guard Training Center. His love for the sea and familiarity with the Coast Guard directed him toward a Coast Guard career. Even now, after 16 years, Chief Monch still says, "I can't be too far from the water."

Out of boot camp, George went to Yorktown, VA, for a 4-month course in engineering. His first assignment was back home in Cape May aboard the cutter *Alert*. As George explains it, his first duty assignment was "basic engine cleaning." However, it was not long before he was promoted in both rank and responsibility. He was assigned to overhauling small boilers and maintaining the fresh water system. He also helped repair auxiliary engine equipment.

George's next assignment was a 1-year tour in Japan. He started out as a watchstander and advanced to supervise the overhaul of engines and auxiliary equipment. He then returned to Cape May to become part of the Aids to Navigation Team, responsible for operating and maintaining several boats, lighthouses, and navigation buoys.

George left active duty after 8 years, but stayed in the Coast Guard Reserve, working weekends as a small boat operator on search and rescue missions. Three years later, seeking greater job security, he decided to go back on active duty. He was assigned to the *Eagle*, the Coast Guard Academy's training vessel. In the winter, George supervised the modernization of the ship's auxiliary equipment (engines that are used in place of the sails). In the summer, as the *Eagle* sailed across the Caribbean and the Atlantic to Europe, he gave the cadets instruction in seamanship and the ship's auxiliary equipment.

George's next assignment was on the West Coast, where he was the engineering supervisor on the *Point Ledge*, a vessel used for search and rescue and drug enforcement along the California coast.

For the past 2 years, Chief Monch has worked at the Coast Guard shipyard in Baltimore, MD. In charge of equipment for a variety of vessels, he orders parts and advises the ship's crew on how to replace broken parts and repair equipment.

TRAINING

The services provide apprentice marine engine mechanics with 9 to 14 months of basic and initial job training. It combines classroom instruction and on-the-job training. Classroom instruction includes the theory and operation of internal combustion engines and propulsion machinery. Experienced mechanics and engine room supervisors direct on-the-job training aboard ships or at repair centers. Advanced training is available for experienced marine engine mechanics to increase their troubleshooting skills and refresh their knowledge of maintenance and repair procedures.

During their careers, marine engine mechanics learn supervisory skills through leadership training and job experience. This training continues through the marine engine superintendent level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in working with your hands and with machines, you may also want to consider a career in the closely related occupation of boiler technician. Other related occupations—machinist, aircraft mechanic, automobile mechanic, and powerhouse mechanic—can be found in the Vehicle and Machinery Mechanic Occupations cluster and the Machine Operator and Precision Work Occupations cluster in the Military Occupations section of this book.

TYPICAL CAREER PATH

Timeline

MARINE ENGINE SUPERINTENDENT

Superintendents plan and direct maintenance and repair activities of marine engine mechanics on ships or at repair centers. They:

- Organize training programs and long-range maintenance programs
- Issue orders and instructions for attaining objectives
- Predict personnel, equipment, and material needs
- Develop and monitor safety programs
- Review and update requirements for watchstanding qualifications

17-20 yrs

ENGINE ROOM SUPERVISOR

Marine engine mechanics who master the technical skills and demonstrate leadership qualities can advance to become engine room supervisors. At this level, they:

- Supervise repair of engines, propulsion machinery, and shipboard mechanical equipment
- Prepare reports on machinery repairs and performance
- Give technical advice and help
- Adjust work assignments for personnel development and cross-training
- Supervise an engine room watch and make sure that watchstanders maintain proper qualifications

8-9 yrs

MARINE ENGINE MECHANIC

Mechanics perform more complicated engine repairs and help apprentice mechanics. At this level, they:

- Find the causes for inefficient engine and power plant operations
- Determine repairs needed and perform or direct repair work
- Instruct mechanics in operational procedures and in damage and casualty control
- Check main engine bearing and thrust clearance
- Clean, inspect, and repair mechanical and hydraulic governors (speed limiting devices)

4-5 yrs

APPRENTICE MARINE ENGINE MECHANIC

After initial job training, apprentice mechanics work under close supervision to perform maintenance and repair. They:

- Clean and repair or replace hydraulic filters and fuel oil injectors
- Study blueprints and drawings to trace, locate, and inspect piping systems, valves, and other machinery parts
- Inspect and repair engine parts, such as rings, pistons, bearings, and cylinder heads
- Verify clearances between engine parts, using gauges and micrometers
- Service and repair hoisting machinery, ship elevators, and refrigeration and air conditioning equipment

MEDICAL SERVICE TECHNICIANS

ARMY
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COAST GUARD

Medical service technicians help treat the sick, injured, and wounded. As a medical service technician, you assist doctors and nurses in giving medical care to service members and their families. You begin your career performing medical procedures, such as giving shots, providing emergency first aid, and taking patients' vital signs (pulse, temperature, respiration, and blood pressure). Later you may perform minor surgery, give emergency treatment, or provide treatment for the critically ill. There are opportunities to advance to medical service supervisor and perhaps to medical services coordinator in a large health care facility.

DUTY ASSIGNMENT

Medical service technicians may be assigned to a hospital, clinic, emergency room, or ship's dispensary. They may also be assigned to a search and rescue unit or field hospital. Medical service technicians are assigned in both the United States and overseas. Technicians who specialize in a particular field of medicine may be limited to hospitals with medical departments in their specialty. As technicians advance in rank, most assignments are made to medical facilities where there are large staffs to manage.

ADVANCEMENT

Since someone's life may hang in the balance, medical service technicians must be sure and precise in their work. During emergencies or combat, a technician may be called on to make life or death decisions. Medical service technicians must master handling, treating, and caring for patients and assisting medical officers. They must also become skilled at carrying out basic medical procedures.

Medical service technicians who choose one field of medicine as a specialty must complete advanced training and gain additional job experience to qualify in that specialty. After mastering the basic skills, the willingness to assume leadership roles helps technicians advance through the supervisory levels of this career.

Profile: Larry Roberts

Larry Roberts feels that his career as an Army medical service technician has made the most of his abilities. "I'm good with people," he says, "and I react well in emergencies." His first assignment was with the 65th Medical Group, near Yongsan, Korea. In the beginning, he worked in the dispensary (clinic), caring for patients under the direction of a physician. When needed, he was sent to the demilitarized zone (DMZ) to treat casualties. Within a year, he had been promoted from private first class through sergeant and had become a medical noncommissioned officer (NCO).

From Korea, Larry was assigned to Letterman Army Medical Center, CA, where he cared for patients in special care units and the emergency room. He gave medications, changed dressings, maintained supplies, and helped patients after surgery. Larry liked working in the emergency room best. "There was always something happening," he says. "It kept me sharp and nimble."

Even though he enjoyed his work, Larry decided at this point to leave the Army. He was a civilian for only 83 days. He realized he liked his career; it interested him more than any others he saw, so he reenlisted.

Larry was sent back to the DMZ in Korea for a year to be in charge of a dispensary. He was then transferred to the 377th Medivac Squadron, a helicopter squadron that picked up patients from all over Korea. His job was to keep the patients alive until they got to the hospital. Back in the States, Larry was assigned to an Army medical center. He started in the emergency room, where he performed emergency patient care and went on ambulance runs, and ended his tour in the burn unit.

Larry's next assignments took him more into administration. By this time, Larry had been promoted through staff sergeant to sergeant first class. His best experience, he feels, was at Letterman Army Medical Center, where he was NCOIC of the department of ambulatory care. "Everything came together there," he says. "I had a good group, and I felt good about what I could do."

Larry is now the career advisor NCO for medical service technicians. With 18 years of travel and adventure behind him, he uses his wide knowledge of the field in helping select people for schools and assignments.

SPECIALIZATION

Just as doctors specialize in specific fields of medicine, so may the medical service technicians who assist them. Medical fields that technicians choose as specialties include neurology (treating brain and nervous system disorders), allergy/immunology (treating patients with allergies), and aerospace physiology (assisting flight surgeons in caring for flight crews). Technicians may also specialize in a particular type of duty, such as emergency room and ambulance service, air search and rescue, or aeromedical evacuation (helping to transport patients and giving in-flight medical care). Some technicians train for independent duty to provide medical care at remote locations where doctors may not be available.

TRAINING

The services provide medical service technicians with 9 to 24 months of basic and initial job training. It includes both classroom instruction and clinical (on-the-job) experience. Classroom instruction stresses the basics of patient care, emergency first aid, and medical and administrative service procedures. Clinical training, which takes place under a doctor's supervision, gives technicians experience in helping doctors examine and treat patients and the skills needed to give shots, take patients' vital signs, and collect blood, tissue cultures, and other samples for laboratory tests. This training includes the completion of medical history forms and other administrative procedures.

Advanced technical training is available for medical service technicians in surgical procedures, preventive medicine, or medical diagnosis and treatment. At this point, technicians may also train for a specific field of medicine or in a particular duty assignment.

During their careers, medical service technicians learn supervisory skills through leadership training and experience. Specific training emphasizes evaluating personnel, planning and assigning duties, and supervising medical service operations. Such training continues through the medical services coordinator level with courses in management and administration of large hospitals and medical centers. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in a medical career, you may also want to consider other military medical occupations described in the Health Care Occupations cluster in the Military Occupations section of this book.

Timeline

TYPICAL CAREER PATH

MEDICAL SERVICES COORDINATOR

Expert supervisors may advance to the most senior level, where they coordinate supply, administrative, and paramedical activities. They:

- Help medical staff plan and direct patient care and treatment
- Plan and set up training, health care, and disaster control programs
- Oversee and inspect training, administrative, and patient care operations
- Set work priorities and procedures for medical service activities
- Recommend ways to improve facility operations and working conditions

18-19 yrs

MEDICAL SERVICE SUPERVISOR

Highly skilled medical service technicians who show leadership ability are assigned supervisory responsibilities. Supervisors:

- Plan and schedule work, personnel, and training assignments
- Inspect medical service operations
- Write technical, personnel, and patient reports and records
- Help select sites and set up field medical facilities

8-11 yrs

MEDICAL SERVICE TECHNICIAN

By increasing their skills, medical service aides may assume additional duties. As technicians, they:

- Train new workers in basic first aid and emergency medical care
- Treat shock victims and wounded, injured, or critically ill patients
- Drive ambulances and care for patients until they are admitted to a medical facility
- Perform minor surgery, suture wounds, and make and apply casts to broken limbs
- Prepare patients for surgery and perform preoperative and postoperative care

4-6 yrs

MEDICAL SERVICE AIDE

After initial job training, medical service aides are assigned to a medical services unit. Working under close supervision, they:

- Fill out patients' medical history forms and other records
- Take and record patients' temperature, pulse, respiration, and blood pressure
- Assist in examining and treating patients who have minor injuries or common diseases
- Collect blood, cultures, and other specimens
- Provide emergency first aid and change bandages and dressings

MILITARY POLICE

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Profile: Harold Peters

When Harold Peters joined the military, he knew he wanted to be a Marine. He actually began his career in the infantry. It was not until 14 years after he joined—after serving several tours in Vietnam and Japan and after receiving a number of decorations—that he became a military policeman (MP). "I felt I would be a good MP," he explains, "because I thought I could set a good example."

Harold had some previous experience serving special duty as a patrolman and desk sergeant in Japan, so he knew what to expect on his first assignment at Camp Pendleton, CA. As senior patrol sergeant and desk sergeant, he ensured base security and supervised the units on the base. He also enforced regulations. "As an MP, the only thing I did not like," he says, "was seeing young marines get in trouble, but sometimes I could talk to them and help them."

Harold was next assigned to corrections as a deck warden in the maximum security correctional facility. When he was reassigned back to MP duty, he became operations chief at Camp Pendleton. He moved up to inspector and then to support operations officer in charge of weapons and materials. One assignment during this time was particularly important to him: he was placed in charge of police enforcement for a Vietnamese refugee camp.

Master Gunnery Sergeant Peters is now provost sergeant to the provost marshal for the morale, welfare, and performance of all enlisted personnel at Camp Lejeune, NC. In this position, he serves as liaison to the provost marshal on military police matters, conducts inspections of MPs, and assigns them to their duties.

Harold has given 29 years of service to the Marine Corps and his country. As he approaches his retirement, he says that he has liked helping young Marines, guiding them in their duties and responsibilities, and giving them encouragement. He is looking forward to his next (and last) assignment, which will be in Japan. "I've had an exciting career in the Marine Corps," he says. "I only wish it could last longer."

Military police (MPs) must always be ready for the unexpected. As an MP, you stand guard, conduct patrols, control traffic, arrest suspects, and enforce military laws and regulations. You begin your career performing duties as part of a base police force. As you gain experience and develop leadership skills, you may direct a small squad. There are opportunities to advance to law enforcement supervisor and perhaps to law enforcement superintendent.

DUTY ASSIGNMENT

MPs are most often assigned to a security or law enforcement unit at a military base. The size of the base determines the size of the military police force and the duties of the MPs. At small bases, the force is small, and MPs usually carry out many different duties. At larger bases, where the force is larger, MPs are likely to be assigned to a specific duty. Most MPs are assigned to bases in the United States, but there is good opportunity for assignment to a base overseas, particularly in Europe.

ADVANCEMENT

MPs must be able to think and react quickly in dangerous situations. They must master skills in patrolling, self-defense, and emergency response. MPs must show good judgment and a sense of responsibility, and remain calm under stress while performing their duties. To advance, MPs must master law enforcement responsibilities, such as crowd control, traffic enforcement, and crime prevention. Experienced police can choose to take additional training to qualify as detectives. After mastering the basic skills, the willingness to assume leadership roles helps MPs advance through the supervisory levels of this career.

In the Navy, a military police career starts at the supervisory level. Individuals may enter the military police at this point from almost any job in the Navy.

SPECIALIZATION

Military police may specialize in one of several areas of law enforcement. For example, some MPs work with specially trained dogs to conduct patrols and detect drugs or explosives. Others work as security specialists to protect aircraft, missiles, nuclear weapons, and property from enemy and terrorist attacks.

TRAINING

The services provide military police with 9 to 12 months of basic and initial job training. The MP's career begins with a basic law enforcement or security operations course that includes instruction and practical exercises in traffic control, self-defense, security patrols, convoy escorts, and suspect arrest and control. MPs also get on-the-job training from their squad leader and supervisor. Advanced training courses in traffic law enforcement, accident investigation, patrol techniques, and base security activities are available throughout a military police career.

Military police may also receive training focusing on specialized military duties. Dog handlers train to work with and care for their dogs. They learn obedience techniques and how to use a dog in law enforcement or security patrols. Security specialists train in the use of special weapons, security operations, and small unit tactics.

During their careers, MPs learn supervisory skills through leadership training and job experience. Leadership training develops skills in supervising security or general law enforcement programs and scheduling work activities. Training continues through the level of law enforcement superintendent, with courses in planning, managing, budgeting, and evaluating law enforcement activities.

RELATED MILITARY OCCUPATIONS

If work in the protective services interests you, you may also want to consider a career as a detective, corrections specialist, or firefighter. See the Service Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

Timeline

TYPICAL CAREER PATH

LAW ENFORCEMENT SUPERINTENDENT

Law enforcement superintendents manage military police forces on large bases. At the most senior level, they:

- Decide where military police support is needed
- Coordinate military police work with civilian agencies
- Set police force goals and objectives
- Study accident reports and plan traffic safety programs

18-20 yrs

LAW ENFORCEMENT SUPERVISOR

By demonstrating leadership skills, squad leaders advance to supervise several squads. At this level, they:

- Develop crime prevention programs
- Help MPs with problem cases
- Plan work schedules and make duty assignments
- Prepare technical and personnel reports

8-11 yrs

SQUAD LEADER

Through experience and training, MPs advance to direct a small squad of police. Squad leaders:

- Give on-the-job training to new MPs
- Carry out traffic safety programs
- Direct crowd control operations
- Inspect squad members for proper uniform and equipment

4-6 yrs

MILITARY POLICE

In their first assignments on a base police force after initial training, new MPs:

- Patrol areas on foot, by jeep, or by boat
- Direct the movement of people and traffic
- Investigate traffic accidents
- Arrest crime suspects
- Prepare criminal and accident reports

PERSONNEL SPECIALISTS

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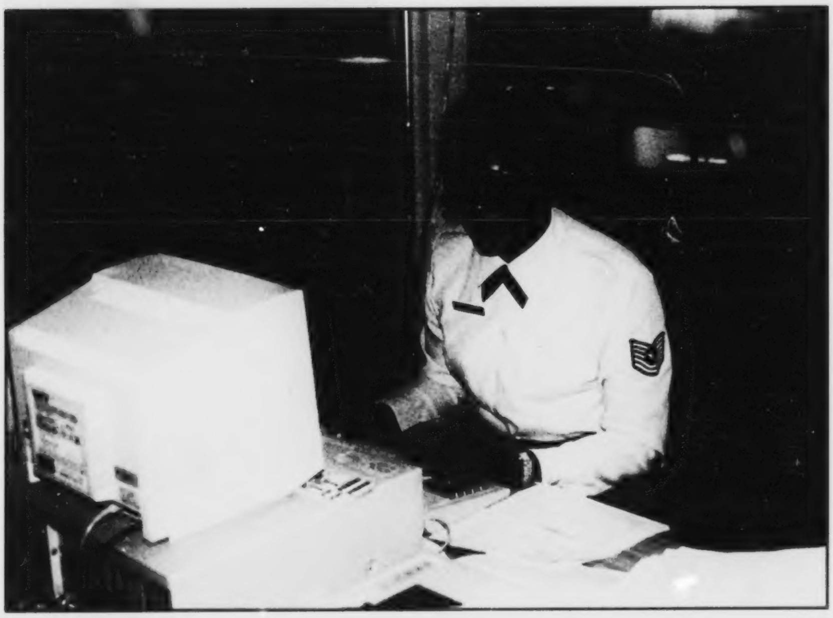
MARINE CORPS
COAST GUARD



Profile: Donna Grant

Technical Sergeant Donna Grant gets shocked, but positive, reactions when people discover she is a career woman in the military. She likes the opportunities open to her in the military and feels that they are basically the same for women as they are for men. She believes that "if you give it everything you've got, the Air Force will give you all it has to offer."

Donna finished the self-paced initial training course for personnel specialists in just 6 weeks, because she already knew how to type. Her first assignment was at Lowry Air Force Base (AFB), CO, where she scheduled testing for personnel eligible for promotion. She quickly advanced to airman and then to airman first class. At Lowry, she met and married her husband, who is also in the Air Force.

On her next assignment at the Royal Air Force in Upper Heyford, England, she was responsible not only for test scheduling, but also for reviewing, maintaining, and organizing records for all the enlisted and officer promotion programs. "At this point, I really dug into the career field, started learning things for myself, and began building a good work reputation." She achieved senior airman and sergeant and soon became the assistant noncommissioned officer in charge (NCOIC).

Over the next several years, Donna's assignments took her into various areas of personnel administration. At Offut AFB, NE, she was the NCOIC of processing base personnel leaving the Air Force. Here, she received the Meritorious Service Medal for the high quality of her work and was also promoted to staff sergeant. Donna was head of quality force on her next assignment at Thule AFB, Greenland, a small base 600 miles south of the North Pole. "There were only a few people in our office, so we all had alot of responsibilities and got some really good experience. But our 4th of July baseball game was played in the snow."

Donna worked on separations and retirements on her next assignment at Davis Monthan AFB, AZ. As part of her duties, she implemented computer programs and gave briefings on promotions. Through her efforts, the base personnel office was able to make significant improvements in its promotions and testing process. Technical Sergeant Donna Grant is now the NCOIC of the promotion branch at Scott AFB, IL.

The military recruits, trains, promotes, reassigns, and retires over a million people each year. As a personnel specialist, you help in the process of matching service requirements with individual needs. You begin your career performing clerical duties, such as adding information (duty assignments, health information, and promotions) to service records and centralized data bases. As you gain experience, you may enter records into a computer and give advice and assistance to service members and their dependents. There are opportunities to advance to personnel specialist and perhaps to personnel supervisor.

DUTY ASSIGNMENT

Personnel specialists work in office settings on military bases or aboard ship, although some specialists may accompany their units in the field during special exercises. Personnel offices range in size according to the number of service members assigned to the base or unit; most large personnel offices also have some civilian employees. While most personnel specialists work at military bases in the United States, there is good opportunity for overseas assignment.

ADVANCEMENT

Since personnel specialists work closely with people, they need to have good communications skills and to be able to work easily with others. To handle the volume of paperwork and detailed information needed for personnel actions, they must be logical, well organized, and have a good memory for details. They must show good judgment when processing requests for duty assignments or training. The ability to type and work with computers is particularly important for advancement in this career. After mastering the basic skills, the willingness to assume leadership roles helps personnel specialists advance through the supervisory levels of this career.

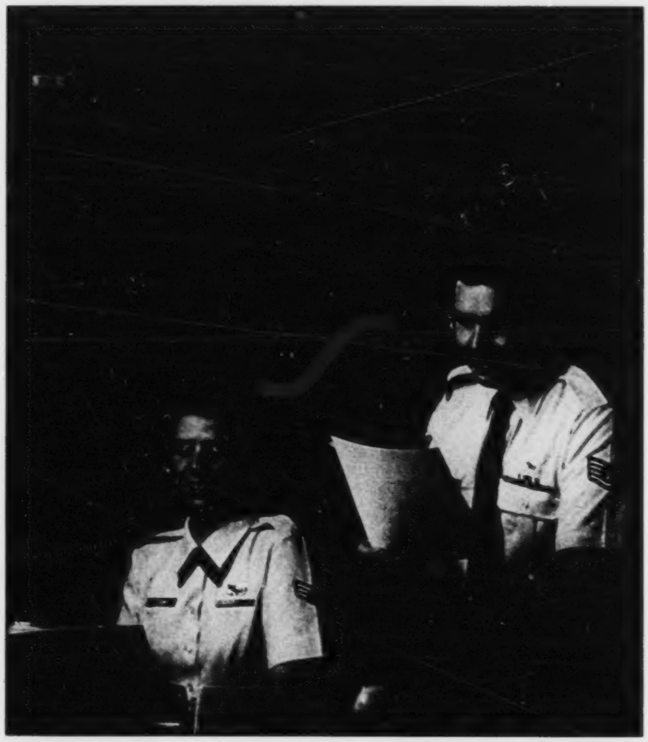
TRAINING

The services provide personnel specialists with 9 to 11 months of basic and initial job training. It combines classroom instruction and on-the-job training. Classroom training emphasizes typing, interviewing techniques, test interpretation, classification testing, and routing and filing of forms and records. Supervisors give on-the-job training focusing on office procedures and the operation of personnel computer systems. Self-study also helps clerks learn about military careers and the services' needs for personnel in critical job areas.

During their career, personnel specialists learn supervisory skills through leadership training and job experience. This training continues through the personnel supervisor level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in becoming a personnel specialist, you may also want to consider a career as an administrative support specialist, recruiter, or payroll specialist. See the Administrative Occupations cluster in the Military Occupations section of this book for descriptions of these and related occupations.



Timeline

TYPICAL CAREER PATH

PERSONNEL SUPERVISOR

Personnel supervisors supervise the staff of a personnel office or advise commanders on personnel matters. They:

- Evaluate personnel office procedures and work load
- Organize and schedule training programs
- Orient new personnel clerks and assign them to supervisors for on-the-job training
- Develop operating budgets and track expenditures
- Advise supervisors and commanders on personnel matters

17-21 yrs

PERSONNEL SPECIALIST

Personnel clerks who have mastered the work routine may become personnel specialists. At this level, they:

- Supervise the processing of personnel action forms (promotions, awards, and reassignments) and the maintenance of service record files
- Train and assist new personnel clerks
- Assign work to personnel clerks and monitor their job performance
- Conduct preretirement seminars
- Assist servicemembers and dependents who have special problems, such as a need for special medical care

5-7 yrs

PERSONNEL CLERK

After initial job training, personnel clerks perform routine clerical and administrative support duties to collect and maintain military personnel records. They:

- Interview incoming personnel and test and evaluate their qualifications
- Prepare and maintain servicemember personnel record files
- Prepare and type requests for orders, correspondence, personnel action forms, and related records and reports
- Maintain files and review personnel records with servicemembers
- Use computers to store and retrieve personnel information
- Process paperwork for promotions, retirements, reenlistments, separations (discharges), and reclassifications (changes in job specialties)
- Discuss training courses, duty assignments, and educational materials with servicemembers

RADAR AND SONAR EQUIPMENT REPAIRERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Radar and sonar equipment is used to detect objects in the air, under water, or at long distances that could not otherwise be seen. As a radar and sonar equipment repairer, you maintain and repair parts of these complex systems. You begin your career working under close supervision repairing simple parts and units on one system. As you gain experience and skill, you take more responsibility and make more difficult repairs. There are opportunities to advance to repair supervisor and perhaps to electronic repair superintendent.

DUTY ASSIGNMENT

Radar and sonar equipment repairers work in repair units on military installations or aboard ships or aircraft. They may be assigned to units that use radar and sonar equipment or to large facilities equipped to repair, overhaul, or modify complex systems. Repairers work at military installations across the nation and overseas. There is good opportunity for overseas assignment.

ADVANCEMENT

Radar and sonar equipment repairers find and fix malfunctions in complex electrical and electronic systems. They start by mastering a single radar or sonar system. To do this, they need to understand the principles of electronics and how the equipment works. They must develop skills in reading schematic diagrams, following detailed work procedures, and using special tools and test instruments. To advance, repairers must develop the analytical skills needed to diagnose the cause of equipment failure. After mastering the basic skills, the willingness to assume leadership roles helps radar and sonar equipment repairers advance through the supervisory levels of this career.

Profile: Richard Block

Richard Block selected electronics as his occupation when he joined the Air Force because, as he says, "I like working with my hands, and I like to see the results of my efforts." He was assigned to become an aircraft control and warning radar specialist.

After basic training, Richard was sent to Keesler Air Force Base (AFB), MS, for a 10-month training course in repairing aircraft control and warning radar. His first assignment as a radar repairman took him to West Germany, where he worked as part of a mobile tactical squadron that was often sent on missions to other parts of Europe. Richard liked the travel—"a big change from high school"—and he also liked working with a small group. He says a NATO exercise in Spain was the highlight of his 3-year tour.

For the next 5 years, Richard's assignments alternated between duty overseas and in the United States. He worked in Ajo, AZ, on height finder radar and then moved up to assistant maintenance support supervisor of repairs on aircraft radar at Palermo, NJ. The Air Force then sent him to Korea for 15 months, where he maintained supporting radar equipment, such as scopes, mappers, trainers, coder/decoders, and interrogator sets. Back in the United States, Richard was assigned to coordinate radar maintenance between his division and the work centers. He then returned overseas to Okinawa for a year as assistant auxiliary maintenance supervisor.

The next 8 years at Cape Charles, VA, were important for Richard. He found himself moving quickly into positions of greater responsibility. Starting as height maintenance radar supervisor for an air division, he advanced to quality control supervisor. In this position, he evaluated personnel, inspected work centers for maintenance, and monitored schemes (which show the placement of equipment).

Richard is now stationed at Warner Robbins AFB, GA, but has retrained to work on air traffic control radar. As maintenance support supervisor, he coordinates the maintenance of radar equipment near the airstrip and air traffic control tower.

SPECIALIZATION

Radar and sonar equipment repairers usually specialize in equipment designed for a specific purpose, such as:

- Air defense radar used around the world to detect enemy missiles, planes, and satellites
- Air traffic control radar used to identify and manage aircraft takeoffs, landings, and flight patterns
- Submarine or ship sonar used for underwater detection and surveillance

TRAINING

The services provide apprentice radar and sonar equipment repairers with 6 to 24 months of basic and initial job training. Initial job training is usually provided in two phases. The first phase consists of basic electrical and electronics training, including electronic theory and principles. The second phase consists of both classroom and hands-on training in a single radar or sonar system. Classroom instruction focuses on applying electronic principles to the specific system. Hands-on training with actual equipment gives experience in the practical application of classroom instruction. Radar and sonar repairers may take advanced electronics courses or training on additional systems.

During their careers, radar and sonar repairers learn supervisory skills through leadership training and job experience. This training continues through the level of electronic repair superintendent with courses in management and administration. Typically, these courses address budgeting, repair shop operations, training program development, and personnel and work load management.

RELATED MILITARY OCCUPATIONS

If you are interested in electronic and electrical equipment repair, you may also want to consider a career as a radio equipment repairer, aircraft electrician, ship electrician, electronic weapons systems repairer, or computer equipment repairer. See the Electronic and Electrical Equipment Repair Occupations cluster in the Military Occupations section of this book for a description of these and other related military occupations.

Timeline

TYPICAL CAREER PATH

ELECTRONIC REPAIR SUPERINTENDENT

Electronic repair superintendents plan, direct, and control activities at radar or sonar repair shops. They:

- Coordinate repair reports and requests for parts
- Prepare personnel, technical, and administrative reports
- Determine needs for personnel, equipment, and spare parts
- Conduct safety and quality control inspections

17-20 yrs

REPAIR SUPERVISOR

Skilled radar and sonar repairers may advance to become supervisors of electronic repair units. At this level, they:

- Develop standard operating procedures
- Assign and reassign work to reduce slowdowns and meet schedules
- Evaluate and train apprentice repairers
- Inspect work and give technical guidance
- Instruct workers in major changes to existing equipment

7-12 yrs

RADAR AND SONAR REPAIRER

As their skills increase, repairers perform more difficult tasks. Radar and sonar repairers:

- Find problems, using troubleshooting techniques and test equipment
- Replace broken electrical and electronic parts using hand tools
- Align and adjust electromechanical assemblies to needed settings
- Test repaired equipment, using special test equipment, such as circuit analyzers (tools that test circuit boards) and continuity meters (tools that trace the flow of electricity)
- Calibrate (adjust) test equipment

3-6 yrs

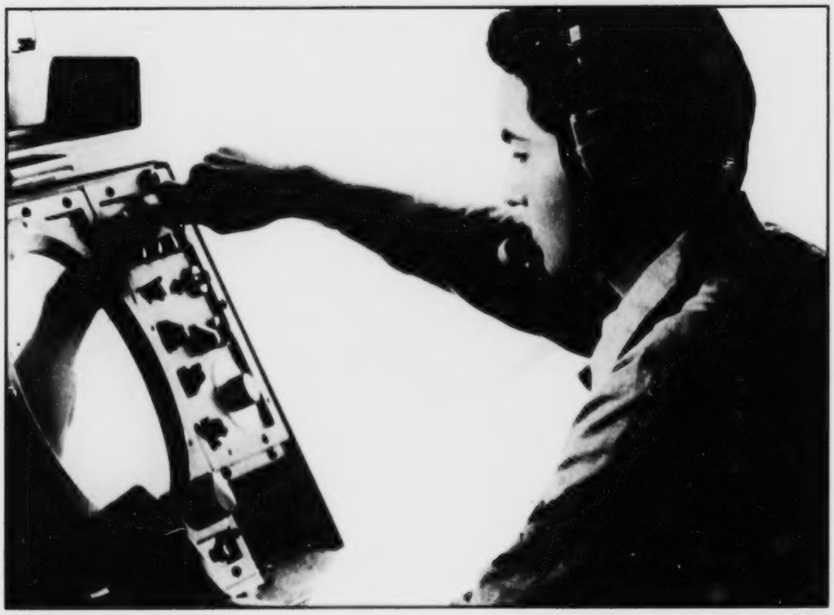
APPRENTICE RADAR AND SONAR REPAIRER

After initial job training, apprentice radar and sonar repairers work under close supervision. They learn preventive maintenance and simple electronic repairs. At this level, they:

- Read repair tags and maintenance orders to determine work tasks
- Check for loose mountings, poor connections, and cracked resistors
- Replace faulty tubes, wiring, semiconductors, and circuit boards
- Clean and lubricate mechanical parts and connections

RADAR AND SONAR OPERATORS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD



The information provided by radar and sonar operators is used to alert air squadrons; to direct missile, mortar, artillery, and naval gunfire; and to help U.S. forces evade enemy detection. As a radar or sonar operator, you identify, classify, and track objects according to their characteristic echoes (sonar) or displays (radar) on your headphones or screen. You begin your career by working closely with an experienced operator to develop your skills in identifying and classifying objects. As you become more experienced, you work more independently and take greater responsibility. There are opportunities to advance to radar or sonar supervisor and perhaps to operations superintendent.

DUTY ASSIGNMENT

Radar and sonar operators work in operations centers or command and control facilities on land or aboard aircraft, ships, or submarines. They work at military bases throughout the world, on coastal waterways, and on the high seas. In some radar and sonar specialties, operators must qualify for flight or submarine duty.

ADVANCEMENT

Tracking objects by radar or sonar requires constant vigilance. Radar and sonar operators must be able to concentrate in order to identify and track one object on a screen full of images. They must be alert for interference, jamming, and masking techniques used by enemy forces to disrupt equipment operations. Once an object has been determined to be a potential enemy threat, it must be rapidly identified; the operators must classify the object and determine the relative strength of the attack. They must then maintain a constant vigil to find the location, course, bearing, and speed of the enemy threat. Operators must also learn to recognize natural objects, such as sea life, land masses, and rain squalls or thunderstorms. After mastering the basic skills, the willingness to assume leadership roles helps operators advance through the supervisory levels of this career.

Profile: Jeff Lightner

Jeff Lightner has always been fascinated by submarines. So after enlisting in the Navy in advanced electronics, he volunteered for submarine duty. "After 16 years," Jeff says, "I'm still glad I made that decision."

Jeff's trip to boot camp was his first airplane ride and his first trip away from home. After this, things began to happen fast. By the time he left boot camp, he had been promoted to seaman. He then went to submarine school for training in electricity, electronics, sonar, and a specific sonar system. On leaving, he was selected class leader and became a petty officer third class.

Jeff's first assignment was on the USS *Wahoo*, operating and maintaining the sonar system. Life aboard the submarine was all Jeff hoped it would be. He liked the camaraderie among the men, and he enjoyed learning to stand all the different watches. During his second year on the *Wahoo*, he was promoted to petty officer second class and soon after became sonar supervisor. After his tour on the *Wahoo*, Jeff went back to school in San Diego for 6 months of training on a new sonar system. He made petty officer first class soon after he arrived and did so well in the course that he was asked to stay on as an instructor.

Jeff went back to sea on the USS *William H. Bates*, a nuclear submarine, as the Leading Petty Officer of a 12-man division. Since he had never operated the ship's particular sonar system, he had to qualify to operate it through on-the-job training. He then became sonar supervisor. When the sonar system was replaced during a ship refit, Jeff monitored the installation of the new system and conducted training for other operators. He was able to use this experience on his next assignment—monitoring the installation of sonar equipment on the new PCU *Houston*. He also wrote the training plan for the equipment and trained the entire sonar division. Two years later, he made chief petty officer and remained on board as the chief sonar technician.

Jeff likes his career in sonar. "The new technology keeps me challenged," he says. He is also proud to see the success of people he has trained. Jeff says he has one last ambition for his Navy career—to be the Chief of the Boat, the top enlisted person aboard a submarine.

SPECIALIZATION

Operators specialize in either radar or sonar systems, and both types of operators may specialize in a particular military function. Many operators monitor the early warning defense systems at isolated radar posts or in airborne command centers. Others operate long-range air search radar aboard ships or work with field radar units directing mortar, antiaircraft, and artillery fire from helicopters. Some operators conduct antisubmarine searches from helicopters. Others work on ships or submarines to detect enemy ships and navigation obstacles.

TRAINING

The services provide apprentice radar or sonar operators with 6 to 18 months of basic and initial job training. Through a combination of classroom instruction and on-the-job training, trainees learn how radar and sonar equipment works, how to identify different objects, and how to operate equipment. Most equipment operators are trained to perform some maintenance of the systems they operate; sonar operators are fully trained to maintain and repair their equipment. At any time during their careers, radar and sonar operators can expect to be retrained as new equipment becomes available. For sonar operators, retraining to maintain and repair equipment may be extensive.

During the early part of their careers, operators who will become flight crew members are given specialized training in swimming, parachuting, air crew survival, and aircraft emergency procedures. Sonar operators who want to qualify for submarine duty must also complete specialized training.

During their careers, radar and sonar operators learn supervisory skills through leadership training and job experience. This training continues through the operations superintendent level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in a career as a radar or sonar operator, you may also want to consider a career in a related occupation, such as air traffic controller, weather observer, space systems specialist, radio operator, or radio intelligence operator. See the Engineering, Science, and Technical Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

Timeline

TYPICAL CAREER PATH

OPERATIONS SUPERINTENDENT

Radar and sonar operations superintendents perform administrative and technical duties. They:

- Plan, schedule, and evaluate training programs
- Assign personnel to duty positions and determine work priorities
- Inform and advise superiors on the use and capabilities of personnel, equipment, and material
- Prepare reports, correspondence, and technical instructions

18-21 yrs

RADAR OR SONAR SUPERVISOR

Operators who master the work routine and demonstrate leadership qualities may advance to become supervisors of ground, airborne, or shipboard radar or sonar units. They:

- Supervise training of personnel who operate, maintain, and repair radar or sonar equipment
- Give technical advice and assistance to operators
- Help superiors develop tactical procedures (responses to potential war situations)
- Conduct tactical training exercises

8-11 yrs

RADAR OR SONAR OPERATOR

Skilled apprentice operators may advance to become radar or sonar operators. At this level, they:

- Ensure that radar or sonar stations are manned during watch and rest periods
- Help operators in multi-target operations and execises
- Train and instruct operators in the use of equipment
- Operate radar and sonar computer equipment
- Test and replace faulty components (parts) and assemblies (major sections) of equipment

4-6 yrs

APPRENTICE RADAR OR SONAR OPERATOR

After initial job training, radar and sonar operators find, classify, and track the movement of airborne, surface, and underwater objects. They:

- Observe objects that appear on radarscope or sonarscope display screens
- Determine the position and movement of objects
- Identify radar or sonar contacts as aircraft, missiles, ships, submarines, or natural objects
- Relay information to pilots, gunners, and navigators by internal communications or radio equipment
- Keep records on objects identified and perform preventive maintenance on equipment

RADIO EQUIPMENT REPAIRERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Radio communications are vital in coordinating sea, land, and air forces. As a radio equipment repairer, you install, maintain, and repair aircraft, land-based, ship-to-shore, or large satellite and microwave relay communications systems. You begin your career working under close supervision to perform maintenance and repairs on a specific radio communications device. As you learn more about radio equipment, you take greater responsibility and perform more complicated tests and repairs. There are opportunities to advance to repair shop supervisor and, perhaps, to radio repair superintendent.

DUTY ASSIGNMENT

Radio equipment repairers are assigned to maintenance units or laboratories aboard ships or on military installations all over the world. Repairs are generally performed in large repair shops equipped to perform complete repair jobs and system modifications, but repairers may also work out of doors or in the field when repairing microwave, satellite, or mobile radio equipment. There is good opportunity for overseas assignment.

ADVANCEMENT

Radio equipment repairers find and fix malfunctions in complex modern communications equipment. To do such work, they must understand the principles of electronics and how state-of-the-art radio equipment works. They must be able to read schematic diagrams, follow detailed work procedures, and use hand and power tools. To advance, repairers must develop the analytical skills needed to diagnose the cause of equipment failure. After mastering the basic skills, the willingness to assume leadership roles helps radio equipment repairers advance through the supervisory levels of this career.

Profile: Brian Chen

Staff Sergeant Brian Chen says that he is never bored with his career as a ground radio technician because "there is always something new to learn." The constantly changing technology, he says, makes his job a challenge.

Brian liked electronics when he took it in high school, so when he joined the Marine Corps, he asked for guaranteed training in ground electronics. After boot camp and a promotion to private first class, Brian had a year of training at 29 Palms, CA, in basic electronics, cryptologic repair, radio fundamentals, and ground radio repair. At the end of the course, he was promoted to Lance Corporal.

Brian's first assignment was at Kaneohe Bay, HI, repairing and maintaining ground radios. It was not long before he became shop chief and then the technical chief of the shop. His duties included performing corrective and preventive maintenance procedures, modifications, calibrations, and supply transactions. Brian enjoyed the travel during this tour. He went on missions to the Philippines, Korea, Thailand, Australia, Guam, Wake Island, and China. He was also part of the team that returned the hostages from Iran. An experience from his travels that stands out in Brian's mind is the time in Singapore when he and his fellow crew members played some New Zealand marines in a rugby match. During his 3 years in Hawaii, Brian was promoted to corporal and then to sergeant.

On his next assignment, Brian was selected for instructor duty at 29 Palms, CA, to teach the ground radio course. He was also promoted to staff sergeant. During his 2 years as an instructor, Brian went to the Staff Noncommissioned Officer Academy in Quantico, VA, where he graduated first in a class of 150. Brian then went back to being a student at the technician theory school, also at 29 Palms, to learn the engineering side of radio equipment repair. In his spare time, he took lessons in rodeo riding.

After his advanced training, Brian was made staff sergeant in charge of the multichannel VHF system at Camp Lejeune, NC. His battalion gave general support to 20,000 Marines and went on many deployments. He is now maintenance chief of 12 technicians supporting a battalion of 1,000 Marines.

SPECIALIZATION

Repairers usually specialize in one of the many types of complex communications equipment. Specialties include:

- Avionics—repairing modular, lightweight electrical and electronic radio communications devices used on modern aircraft
- Microwave—repairing fixed-base electromagnetic wave signal towers that relay information over long line-of-sight distances
- Satellite—repairing satellite dishes used to send and receive signals to and from distant points

TRAINING

The services provide radio equipment repairers with 6 to 18 months of basic and initial job training. It combines classroom instruction and on-the-job training. Classroom training includes electronic principles and concepts and the use of technical guides, tools, and test equipment. On-the-job training is given by senior repairers and shop supervisors. After gaining experience on the job, repairers usually return to the classroom for further training in repairing a specific type of equipment. Advanced training for repairers covers troubleshooting techniques, repair of modernized replacement equipment, or additional types of radio equipment.

During their careers, radio equipment repairers learn supervisory skills through leadership training and job experience. This training continues through the radio repair superintendent level with courses in management and administration. Typically, these courses address budgeting, personnel management, repair shop operations, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in radio equipment repair, you may also want to consider a career as an electronic instrument repairer, computer equipment repairer, or radar and sonar equipment repairer. See the Electronic and Electrical Equipment Repair Occupations cluster in the Military Occupations section of this book for descriptions of these and other related military occupations.

Timeline

TYPICAL CAREER PATH

RADIO REPAIR SUPERINTENDENT

Highly qualified shop supervisors may advance to help officers in managing communications equipment maintenance units. Radio repair superintendents:

- Coordinate communications equipment repair and maintenance with the support unit
- Develop training programs and set training standards and procedures
- Conduct maintenance unit and repair shop inspections
- Help solve maintenance, supply, and personnel problems

17-21 yrs

REPAIR SHOP SUPERVISOR

Skilled repairers who show leadership ability may supervise radio and communications equipment repair shops. Repair shop supervisors:

- Plan and prepare work schedules and make job assignments
- Decide on repair shop work priorities
- Observe and help repairers in work techniques
- Assign trainers for on-the-job instruction of new repairers

7-9 yrs

RADIO EQUIPMENT REPAIRER

As their skills increase, repairers take on more responsibility and perform more complicated tasks. At this level, they:

- Tune, align, and adjust communications equipment for best performance
- Use troubleshooting techniques and interpret wiring diagrams to find equipment problems
- Calibrate (adjust) electronic test equipment and other units, such as receivers and amplifiers
- Train apprentice radio equipment repairers and help with more difficult repairs
- Test radio equipment using meters, oscilloscopes (devices that measure variations in electrical current), and other equipment and instruments

3-6 yrs

APPRENTICE RADIO EQUIPMENT REPAIRER

After initial job training, apprentice repairers perform maintenance and simple repairs on voice and signal communication systems. Working under close supervision, they:

- Check equipment visually and with test instruments
- Use manuals and wiring diagrams to find faulty equipment parts
- Use hand tools to replace tubes, circuits, speakers, and parts
- Set up and operate radio equipment
- Clean and service receivers, transmitters, and other communications equipment and units

RADIOLOGIC (X-RAY) TECHNICIANS

ARMY
NAVY
AIR FORCE
COAST GUARD

Radiology (the use of X-rays) helps doctors detect injuries and illnesses and even treat some diseases. As a radiologic technician, you may take X-rays or give tests using radioisotopes (radioactive liquids) and radiation scanners (Geiger counters). You begin your career performing X-ray procedures under the supervision of a physician. As you develop and master your radiologic skills and work techniques, you are assigned more difficult duties. There are opportunities to advance to radiologic supervisor and radiologic services coordinator.

DUTY ASSIGNMENT

Radiologic technicians may be assigned to a medical service unit aboard ship, to a base hospital or clinic, or to a mobile medical unit. Nuclear medicine technicians and radiologic supervisors are usually assigned to large hospitals, since the equipment and work load at these facilities require such skilled workers. Most radiologic technicians are assigned to units in the United States, but there is good opportunity for overseas duty especially early in a career.

ADVANCEMENT

Since X-rays expose patients to radiation, radiologic technicians must be precise and careful in each procedure. They must be able to work with sick and injured patients and obtain the proper X-rays for study by a doctor. To do this, they must be able to position patients, follow doctors' orders, and operate X-ray equipment. Mastering different techniques, such as X-ray, ultrasound, or computerized scanning, is also important for advancement in this career. Radiologic technicians show their mastery of basic skills through certification by the American Registry of Radiologic Technicians. Certification is awarded to technicians who complete the classroom training given by the military and work for 1 year under the supervision of a radiologist. After mastering the various radiologic techniques and procedures, the willingness to assume leadership roles helps technicians advance through the supervisory levels of this career.

Profile: Ernie Hughes

When Ernie Hughes joined the Navy, he had a guarantee of training in the medical field. He knew he would eventually specialize, but following boot camp, he first went to school to become a hospital corpsman. At the Great Lakes Naval Training Center, Waukegan, IL, he got what he calls "a working knowledge" of anatomy, nursing, and pharmacological chemistry. His first assignment was at the Naval Regional Medical Center, Millington, TN, caring for patients in the intensive care unit. He also worked in medical records and the dispensary, checking throats, taking temperatures, and sending patients to a doctor if he found a problem.

After a year, Ernie was assigned to the medical records unit at the Naval Regional Medical Center, New Orleans, LA. He also worked part-time in the pediatric clinic and the emergency room. As an extra duty, he flew on sea/air rescue missions with the Coast Guard. For this, he was commended for work done above and beyond the call of duty. "My time spent flying with the Coast Guard," Ernie says, "was some of the best of my career."

With 3 years as a hospital corpsman behind him, Ernie began his training for a specialty in nuclear medicine. The training was in two parts. First, Ernie attended classes in math, chemistry, anatomy, physics, and radiopharmacy at the Naval School of Health Sciences, Bethesda, MD. Then he went to the Naval Regional Medical Center, San Diego, CA, for on-the-job training in his new specialty. Under guidance, he operated and maintained radioactive isotope therapy apparatus to do imaging, blood work, and laboratory tests.

Ernie's first, and current, assignment as a clinical nuclear medicine technician is at the Armed Forces Radiobiology Research Institute, Bethesda, MD. Ernie helps medical officers prepare and conduct radioactive isotope research. His work has included studies of the effects of various levels of radiation on organs of the body and research on neuroreceptors in the brain.

Petty Officer First Class Ernie Hughes likes his specialty. "I had to work hard to get here," he says, "but now I have a respected career that challenges me. I am in a position to make decisions and to work on my own."

SPECIALIZATION

Radiologic technicians may specialize as either X-ray or nuclear medicine technicians. X-ray technicians operate sensitive equipment to take X-rays for doctors to study. Nuclear medicine specialists help doctors diagnose and treat patients through procedures that use radiation-producing materials. They may administer solutions or operate equipment that gives measured radiation therapy to cancer patients.

TRAINING

The services provide radiologic technicians with 12 to 24 months of basic and initial job training. It combines classroom instruction and clinical (on-the-job) experience. Classroom instruction stresses developing X-ray film, operating fixed and mobile X-ray units, and taking routine X-rays of the arms, legs, trunk, and skull. Clinical training is conducted under the supervision of a radiologist (M.D.) and a senior radiologic technician. This on-the-job training includes moving and positioning patients, completing and maintaining patients' records, and conducting soft tissue radiographs and bone surveys. Radiologic technicians may take advanced training in specialized techniques, such as angiography (images of blood vessels), xeroradiography (machines producing positive exposures), and computerized axial tomography (CAT) scans (images of a specified level in the body).

Specialists in nuclear medicine need an additional year of training. This training includes 16 weeks of classroom instruction in physics, chemistry, mathematics, and the laboratory procedures needed to work with radioactive liquids. Training also includes operating and maintaining equipment for nuclear medicine diagnosis and therapy. The rest of the year is spent in clinical (on-the-job) training to learn the application of safety, chemical, and medical techniques for different nuclear medicine studies.

During their careers, radiologic technicians learn supervisory skills through leadership training and job experience. This training continues through senior management levels with courses in management, administration, and advanced technical skills. Typically, these courses address budgeting, supervisory techniques, training program development, and recent advances in the field of radiology.

RELATED MILITARY OCCUPATIONS

If you are interested in using modern technologies to help others with medical problems, you may also want to consider a career as a medical laboratory technician, cardiopulmonary or electroencephalographic (EEG) technician, or an operating room technician. See the Health Care Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

Timeline

TYPICAL CAREER PATH

RADIOLOGIC SERVICES COORDINATOR

At the most senior level, radiologic technicians supervise large radiology departments. At this level, they:

- Plan and direct training programs for radiologic aides and technicians
- Coordinate radiology programs and activities with other health specialists
- Develop guidelines for conducting standard radiologic procedures and setting work priorities
- Inspect radiology departments and monitor work procedures

18-20 yrs

RADIOLOGIC SUPERVISOR

Skilled radiologic technicians who show leadership ability may be assigned to supervisory positions. As supervisors, they:

- Give technical help to aides and technicians
- Assist doctors with difficult cases
- Plan and schedule work assignments
- Prepare technical, personnel, and administrative reports
- Supervise radiation surveying, monitoring, and decontamination control duties

8-10 yrs

RADIOLOGIC TECHNICIAN

By mastering basic skills and completing additional training, radiologic technicians are assigned more difficult duties. At this level, they:

- Train new personnel to use X-ray equipment
- Maintain and adjust X-ray equipment
- Collect X-rays and other tests for physicians' use
- Complete patients' files and store X-ray film
- Approve the radiograph techniques and computations of new technicians

4-6 yrs

RADIOLOGIC AIDE

After initial job training, new radiologic staff are assigned to radiology departments of hospitals, field units, or ship dispensaries. Working under close supervision, they:

- Move patients to and from the radiology unit
- Position patients on X-ray tables
- Load and position film holders, set controls for power and time, and take X-rays
- Move and set up mobile X-ray machines
- Develop X-ray film

RELIGIOUS PROGRAM SPECIALISTS

ARMY
NAVY
AIR FORCE

Religious program specialists help chaplains meet the pastoral needs of military personnel and their families. As a religious program specialist, you keep the chaplain's office running smoothly, coordinate religious activities, and manage the chapel. You begin your career typing, filing, and performing clerical duties in chapel offices. As you gain experience, you take more responsibility for organizing religious activities, such as chapel services, weddings, baptisms, and funerals. There are opportunities to advance to chapel supervisor and perhaps to chapel operations coordinator.

DUTY ASSIGNMENT

Most religious program specialists work on large military bases at base chapels and in chaplains' offices. They may also serve aboard ships or with combat forces in the field. Most religious service specialists work at bases in the United States, but there is opportunity for overseas assignment.

ADVANCEMENT

Because religious program specialists represent the chaplain in day-to-day activities, they must be mature, sincere, and dependable. They must have good typing and clerical skills and a good command of business math to run the religious program office efficiently. Religious program specialists must understand the principles of different faiths to arrange ceremonies. They must also be able to work easily with people of all backgrounds. Administrative and organizational skills become more important as a service member advances in this career. The willingness to assume leadership roles and take on added responsibility helps religious program specialists advance through the supervisory levels of this career.

Profile: Mike Kowalski

Sergeant First Class Mike Kowalski enlisted in the Army for three reasons: "I wanted to serve God, serve my country, and get experience." As a chaplain assistant, he feels he is doing all three.

In training, Mike learned the two sides of his job: administration and religious support. On his first assignment at Fort Carson, CO, Mike supported the Jewish chapel program, which included maintaining a kosher kitchen. At his second job there, he supported programs at the division artillery chapel. This job also took him with the troops on training exercises. He helped set up the field chapel tent, organize field services, and provide moral support to the troops. "This is what the job is all about," Mike says, "helping support the individual soldier." During this assignment, Mike rose to the rank of sergeant.

Mike was next assigned to a military hospital in Landstuhl, West Germany, where he served as the noncommissioned officer in charge (NCOIC) of the hospital chaplain's office. This was a busy time for Mike and his wife. Not only did they provide support to hospital patients and their families, but they also organized a full-scale chapel program for the Landstuhl community. This included conducting chapel services, religious education programs, and activities in music and drama. Mike also supervised chaplain assistants and was responsible for the chaplains' fund.

Back in the States, Mike went to Fort Knox, KY, as the NCOIC of the main post chapel. As a staff sergeant, he provided support for all the chapel programs, supervised and trained the chaplain assistants, and took care of the chapel and its equipment. When Mike was switched to the staff chaplain's office, he handled budgeting and contracting for material and equipment for the 12 chapels on the post.

Mike is now assigned to the U.S. Army Chaplains' Center and School, Fort Monmouth, NJ, as an instructor. He teaches new chaplain assistants how to support chapel activities. Mike recently returned from the Army Airborne School, where he became parachute qualified.

Mike feels that his career has provided him a unique opportunity. "I love people," he says. "My job has given me a chance to be with them and help them."

TRAINING

The services provide religious program specialists with 6 to 9 months of basic and initial job training. Training focuses on developing clerical and administrative support skills. Depending on the assignment, training may be given in religious support duties. Chapel supervisors and chapel operations coordinators may receive advanced training in accounting, personnel management, and the preparation of special administrative records and reports.

During their careers, religious program specialists learn supervisory skills through job experience and leadership training. This training continues through the level of chapel operations coordinator with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in service-oriented and people-to-people work, you may also want to consider other occupations in the Human Services Occupations cluster or the Service Occupations cluster in the Military Occupations section of this book.

TYPICAL CAREER PATH

CHAPEL OPERATIONS COORDINATOR

Supervisors may advance to become chapel operations coordinators responsible for religious program activities in subordinate commands. At this level, they:

- Prepare and conduct command briefings on religious programs
- Coordinate worship schedules and educational materials development
- Set goals, objectives, and priorities
- Visit, monitor, and review the performance of religious program specialists
- Prepare and route consolidated reports on religious program activities
- Coordinate programs with hospitals, welfare agencies, and confinement facilities

16-18 yrs

CHAPEL SUPERVISOR

Skilled specialists may advance to become chapel supervisors responsible for organizing and leading chaplains' offices. Chapel supervisors:

- Oversee religious program specialists
- Train personnel and assign them their duties
- Coordinate and supervise volunteers and part-time workers
- Review correspondence and reports for accuracy and completeness
- Prepare religious packets for prisoners and hospital patients
- Coordinate recruitment and training of ushers, lay readers, and religious school teachers

6-8 yrs

RELIGIOUS PROGRAM SPECIALIST

After initial job training, new personnel are normally assigned to a base chapel where they learn to:

- Type letters, marriage records, certificates, and confirmation, baptism, and funeral records
- Prepare the chapel for religious services or special ceremonies, such as weddings, funerals, and memorial services
- Help the chaplain conduct religious services and ceremonies
- Help recruit and train ushers and religious school teachers
- Schedule the chaplain's appointments and receive visitors in the chaplain's office
- Type bulletins for worshippers and maintain office files

REPORTERS AND NEWSWRITERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Reporters and newswriters keep service members, the local community, and the folks back home informed about important events. As a reporter or newswriter, you prepare news releases, hometown news stories, feature articles, and editorials for publication or radio/television broadcast. You begin your career developing skills in researching, gathering, and organizing information. As you gain experience, you may write feature stories or news scripts. There are opportunities to advance to editor of a military newspaper and perhaps to public affairs coordinator for a large military base.

DUTY ASSIGNMENT

Reporters and newswriters work at military bases, but the stories they cover may take them all over the world. Many work at large installations, where they write press releases and public relations articles for the public affairs office. Others work for base newspapers, radio/television stations, or magazines. Most reporters and newswriters work at military bases in the United States, but there is good opportunity for overseas assignment, particularly for those assigned to the Armed Forces Radio/Television Network.

ADVANCEMENT

Reporters and newswriters must be able to interpret facts, issues, and opinions and use them to write interesting scripts, stories, and articles. They must relate easily to people with different backgrounds, since they research stories on all aspects of military life. They must also be able to select photographs and illustrations to enhance their stories and articles. Skills in public relations are also important in gaining access to service members and story locations and in dealing with the civilian media. After mastering the basic journalism skills, the willingness to assume leadership roles helps reporters and newswriters advance through the supervisory levels of this career.

Profile: Charles Wright

Air Force newswriter Charles (Chuck) Wright described his six month deployment to Saudi Arabia as a combat reporter as the most rewarding experience in his 22-year career. As a senior reporter he had orders allowing him to travel anywhere Air Force personnel were stationed. His stories were carried by the major wire services and appeared in newspapers across the United States. Two things make that experience stand out for Chuck. First, as a military reporter, he was doing everything for which he had been trained. Second, the combat experience allowed him to get to know the many airmen who became the subjects of his stories. Chuck likes being a reporter because he enjoys writing and using his imagination. Being a reporter has allowed him to meet all types of people and deal with different events every day.

In his first assignment, Chuck advanced from "cub" reporter to sports and family page editor for the base paper at Blytheville Air Force Base (AFB), AR. During this assignment, he married his high school sweetheart and found time to complete training at the U.S. Army Information School. Not long after he was married, Chuck and his wife moved to Spain. There, after only 5 years in the Air Force, Chuck became senior reporter of the base newspaper *Alert Strip*. In addition to supervising three reporters, he spent 4 days each week working with Spanish-speaking "cahistas" (typesetters and printers) to print the paper.

Back in his home state of Florida, he spent 3 years managing publicity for over 75 Air Force recruiters. He was responsible for advertisements, managing direct mail campaigns, and working with local newspapers throughout the state. He moved back to Texas as the editor of *The AF Recruiter*, the newspaper of the Air Force Recruiting Command. During this assignment, Chuck also became the speechwriter for the generals who commanded the recruiting service.

For the past 4 years, Chuck has been a public affairs coordinator, first at Osan AFB in Korea and then for the headquarters of the Air Force Reserve at Robins AFB, GA. He manages all aspects of public affairs, including liaison with newspapers and television.

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TRAINING

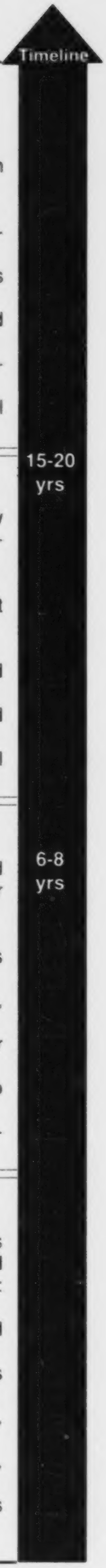
The services provide reporters and newswriters with 9 to 12 months of basic and initial job training. It combines classroom instruction and on-the-job training. Classroom instruction focuses on interviewing techniques, research sources, writing style, story lines, and formats. Intensive on-the-job training given by editors and senior reporters and newswriters helps the individual progress from simple stories to difficult or unusual assignments. Many specialized training courses are available for senior reporters and newswriters in editing, photojournalism, public affairs, media relations, and radio/television scriptwriting.

During their careers, reporters and newswriters learn supervisory skills through leadership training and job experience. This training continues through the public affairs coordinator level with courses in management and administration. Typically, these courses address budgeting, personnel management, and training program development.

RELATED MILITARY OCCUPATIONS

If you are interested in writing and news reporting, you may also want to consider a career as a radio and television announcer, photographer, or audiovisual production specialist. See the Media and Public Affairs Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

TYPICAL CAREER PATH



PUBLIC AFFAIRS COORDINATOR

Public affairs coordinators assist staff officers in directing military public affairs operations. They:

- Plan, organize, and direct military news and information operations
- Determine training needs and set up public affairs training programs
- Establish information-gathering procedures and news story reporting and writing standards
- Inspect public affairs units and make recommendations to improve program operations
- Prepare administrative, personnel, and technical reports for officers

EDITOR

Highly skilled reporters and newswriters who show leadership ability are assigned supervisory responsibilities. Editors:

- Set work priorities and assign personnel to meet news deadlines
- Review work and give technical assistance
- Coordinate military and civilian news media and public information activities
- Teach classes in the principles of journalism and writing styles and techniques
- Prepare public affairs information and historical program activity records

SENIOR REPORTER/NEWSWRITER

As their skills in journalism increase, reporters and newswriters are given more responsibility. Senior reporters and newswriters:

- Schedule and conduct special interviews, news conferences, and tours for civilians
- Plan and design layouts for newspapers, bulletins, and magazines
- Proofread news releases and other material for information content and accuracy
- Edit written material and taped interviews for radio and television
- Conduct research to gather information for in-depth feature news stories

REPORTER/NEWSWRITER

After initial training, reporters and newswriters gather information and prepare news features and stories for military and civilian use. At this level, they:

- Interview individuals and attend meetings and events to gather information
- Write sports and news stories, editorials, and news releases
- Compose scripts for radio/television news reports, speeches, and commentaries
- Process and select photographs for magazines, newspapers, and publicity materials
- Write captions for pictures and compose headlines for news stories

SPECIAL OPERATIONS FORCES

ARMY
NAVY
AIR FORCE
MARINE CORPS

Special operations teams are small, highly trained combat units. They carry out especially difficult and dangerous missions. To qualify for special operations, you must complete an intense physical conditioning program. As a special operations team member, you practice combat and survival tactics in all types of climates and environments (in jungles, swamps, deserts, or underwater). You may raid enemy positions, go on scouting or rescue missions, or undertake demolition operations. There are opportunities to advance to special operations team leader and perhaps to special operations coordinator.

DUTY ASSIGNMENT

After qualifying for special operations, the new team member is assigned to the special operations unit for his service: the Army Green Berets, the Navy SEALs, the Air Force Pararescue Teams, or the Marine Corps Force Reconnaissance Teams. The units are small select forces, and the number of duty assignments are limited. However, the units may be deployed to train or perform missions anywhere in the world.

RELATED MILITARY OCCUPATIONS

If you are interested in a special operations career, you may also want to consider the other Combat Specialty Occupations described in the Military Occupations section of this book. Other similar military occupations are found throughout the Military Occupations section of this book. These occupations include medical service technician, diver, radio operator, blasting specialist, and air crew member.

Profile: Tom Wilson

When Tom Wilson received his draft notice, he could have easily received a student deferment. "But I wanted to do my part," he says, "so I decided to join the Army." Because he was small, his family and friends teased him about enlisting. To prove himself, he decided to enlist for what he thought was the toughest training available—airborne. Then, while he was at Fort Gordon training to be a heavy weapons specialist, he heard about the special forces. He applied because it was an even bigger challenge. "By the time I finished airborne and special forces training," Tom says, "I felt there wasn't anything I couldn't do."

For the next 6 years, Tom was a member of a special forces team with assignments in Fort Bragg (NC), Vietnam, and Fort Devins (MA). He started as a junior demolition man and advanced to team engineer. Tom describes his assignments as continuous training. He went on field exercises all over the world, learning jungle operations in Panama and northern warfare in Alaska. He even went to school to learn French and Spanish. Vietnam, Tom says, was the time he was finally able to put his training to work, a modest statement from a Green Beret with a purple heart and two bronze stars. Throughout his career, Tom has had further training in operations and intelligence, advanced engineering, and leadership, but he feels that he learned the most during his years as a member of a special forces team.

Tom spent the next 3 years as an engineering sergeant for Army battalions on Okinawa and at Fort Bragg, NC. He coordinated with other Army units to supply equipment and support for battalion activities. At Fort Bragg, Tom was promoted to first sergeant and assigned as operations sergeant for a special forces team. He was then assigned as a first sergeant at the Headquarters of a battalion in Korea. In this job, Tom supervised over 200 people providing administrative support to the battalion. He returned to the States as battalion intelligence sergeant for the 82nd Airborne.

In his current job as a combat development project noncommissioned officer (NCO), Tom evaluates new techniques, equipment, and methods for the special forces. He was recently promoted to sergeant major—a goal he set for himself after returning from Vietnam.

ADVANCEMENT

The competition for getting into and advancing in the special operations forces is keen. To succeed, special operations team members must be decisive, creative, and self-reliant. They must show resourcefulness and quick action in rapidly changing and dangerous situations. They must be able to communicate ideas effectively, recall detailed instructions, and analyze new problems quickly. In addition, team members must keep themselves in top physical condition.

All special operations candidates are required to complete job training in another military occupation before entering this career. Many serve for several years in another occupation before volunteering for special operations forces. Many also return to their original occupation after serving in special operations.

Advancement to more senior levels of special operations calls for the ability to direct and coordinate several critical activities at the same time. For example, an individual may coordinate the ground activities of a special operations team while directing close tactical air support or cargo delivery.

SPECIALIZATION

The demanding nature of special operations missions calls for team members to focus their training. Search and rescue missions call for skills in survival, parachuting, and evasion of enemy forces. Underwater demolition missions require skills in scuba diving and the use of explosives. Guerrilla warfare requires training in special weapons and small group combat and infiltration tactics.

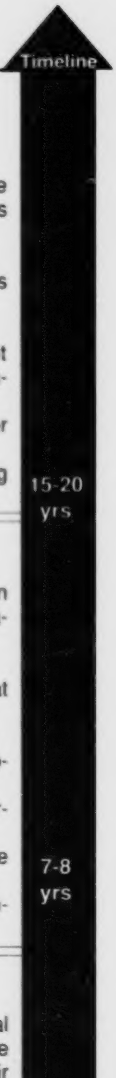
In special operations units, each team member usually concentrates on one area, such as engineering, intelligence, communications, or medical services. However, most are trained and skilled in more than one area to back up other team members.

TRAINING

The services provide 12 to 24 months of special qualifications training to volunteers selected for special operations duty. The initial phase of training stresses physical conditioning. This is among the most challenging training given by the services; not everyone who attempts this training can meet the strict requirements for completion.

In addition to physical conditioning, training is given in reconnaissance, unconventional warfare, small unit tactics, and the use of special weapons. Special skills training may also be given in parachuting, scuba diving, and survival techniques. On-the-job training is conducted through practical field exercises in different climates and terrain, including mountains, swamps, and winter conditions. Specialized training is also given to prepare teams for individual missions.

TYPICAL CAREER PATH



SPECIAL OPERATIONS COORDINATOR

Team leaders may advance to coordinate the activities and training of special operations forces teams. At this level, they:

- Plan unit training or formal special operations forces training courses
- Plan and coordinate multiteam operations
- Assign teams to specialized areas of assignment
- Develop and evaluate new procedures and techniques
- Recruit and organize friendly foreign personnel for special operations
- Advise special forces commanders on planning missions

TEAM LEADER

Highly skilled and motivated team members can advance to become team leaders. Special operations team leaders:

- Train team members in communications, combat tactics, and intelligence gathering
- Assign specific mission tasks to team members
- Instruct allied (friendly) forces in the use of weapons and guerrilla tactics
- Collect, interpret, and distribute intelligence information
- Plan air rescue, air delivery, and other airborne operations
- Plan and lead sabotage and combat raids in enemy territory

TEAM MEMBER

After initial special operations training, special operations team members are assigned to small elite units where they continually train to improve their special skills. Team members:

- Go on reconnaissance (scouting) missions to identify terrain features and spot enemy troop and gun positions
- Infiltrate (go behind) enemy lines to carry out demolition raids or attack enemy positions
- Plant or clear mine fields on land and under water
- Carry out rescue and recovery operations for stranded or trapped servicemen
- Give regular and emergency medical treatment in the field

This career is open only to men.

BEFORE FLIGHT

Examining Officer Career Path Descriptions

Officers have typically chosen a career direction before entering the military and usually have a college education. Opportunities to build on this foundation through further education and training enables individuals to advance in their chosen careers while serving their country. As you read the specific career path descriptions that follow, keep in mind that the military offers many opportunities for change and advancement.

Read the profile for Lance Hogan on page 412 in the description of "Airplane Pilots." His experiences illustrate how one person advanced as an officer. For example:

- Lance made a decision early in life to be a military airplane pilot. He prepared by completing college before joining the Air Force.
- Because Lance chose to specialize as an attack flyer, he had several duty assignments overseas.
- Competition for promotion in this field is stiff. Lance demonstrated that he was not only a superior pilot, but also a capable manager.
- Throughout his career, Lance has received continual technical training. In preparation for meeting his goal of commanding a squadron, Lance is completing a master's degree.
- Lance was selected to fly with the Thunderbirds flight demonstration team. This is an accomplishment very few pilots achieve.

Questions to Consider

Ask yourself the following questions as you read each officer career description:

a) Would I like to have a career in this occupation?

If what you read in the description and typical career path interested you, learn more about it and related officer occupations by reading the Airplane Pilots description in the Military Occupations section.

b) How much training and retraining is necessary to succeed in this career?

All officers receive training throughout their careers. Lance Hogan not only chose to obtain a great deal of advanced technical training, but also took advantage of graduate education offered through the military.

c) How can I advance in rank and responsibility?

Military officers must have consistently excellent performance appraisals to advance. In studying the typical career path for an airplane pilot, you find that it indicates that becoming a command pilot requires not only being an outstanding pilot but also a leader who can handle planning, management, and decision-making responsibilities.

BEST COPY AVAILABLE

Sample of Military Officer Career Path Descriptions

AIRPLANE NAVIGATORS

NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Airplane navigators are vital flight crew members of some of the world's most sophisticated airplanes. As a navigator, you will operate complex electronic navigation systems to bring your airplane safely through its missions. You may also operate weapons systems. You begin your career in a squadron, flying on missions such as air combat, ground attack, submarine hunting, paratroop, or cargo delivery. As you become more experienced and skilled, you will serve in positions of increasing responsibility. There are opportunities to become a squadron commander.

DUTY ASSIGNMENT

Airplane navigators fly in airplanes to and from military bases in the U.S. and overseas. Some fly in airplanes that take off and land on aircraft carriers at sea. Navigators are usually assigned to flying squadrons made up of 10 to 25 airplanes and the crews needed to fly and maintain them. Navigators who fly on long-range airplanes such as bombers, tankers, and transports are usually assigned to bases in the U.S. These navigators have good opportunities for overseas flights. Navigators of fighter, fighter-bomber, or ground attack airplanes have excellent opportunities for overseas duty, particularly in Europe and the Pacific Islands. At some point in their careers, navigators are usually assigned to jobs that do not require them to fly. These assignments may be with headquarters staff or in a different occupation entirely.

RELATED MILITARY OCCUPATIONS

If you are interested in a career as an airplane navigator, you may also want to consider a career as a helicopter pilot or airplane pilot. See the Transportation Occupations cluster in the Military Occupations section of this book for descriptions of these occupations. The career of airplane pilot is also described in the next military career description.

Profile: Greg Martin

Greg Martin grew up in Oklahoma, the son of a former Marine. He went to college on a football scholarship and after graduation, he decided to become an officer in the Marines. Greg went to Officer Candidate School and says, "The school was all I expected, challenging, to say the least." His career ambition was to fly, and he earned his "wings" as a navigator in Pensacola, FL. Greg and his wife particularly enjoyed their first tour of duty in Hawaii.

Greg flew with several F-4 Phantom squadrons. His assignments took him to the Marine Corps Air Station at Beaufort, SC; Iwakuni, Japan; Europe; and other bases around the United States. Greg also flew with his pilot to learn how to land on Navy aircraft carriers.

Professionally, Greg loved flying, but he also liked leading the maintenance troops in his squadron. He led the radar shop and later the avionics division, handling all electronic equipment. "There is a real sense of accomplishment in taking a group of men, a bunch of parts, and working together to produce 'up' (fully capable) airplanes."

A highlight of Greg's career came when he was selected to attend the Navy Fighter Weapons School, popularly called "Top Gun," in Miramar, CA. He and his pilot spent 5 weeks flying every air combat maneuver possible. They then went on as a team to the Marine Corps Weapons Training Instructor Course in Yuma, AZ. There they practiced F-4 attack missions, including electronic warfare and air combat.

Greg held a number of increasingly responsible jobs in each squadron, ending with an assignment as squadron maintenance officer. This assignment was the best of his career. Greg says, "An officer must be a leader. We manage things, but we lead people. There is nothing more rewarding."

Today Greg is completing a tour at Marine Headquarters in Washington, DC. As a lieutenant colonel, he is looking forward to returning to flight operations and hopes eventually to command a squadron.

ADVANCEMENT

Airplane navigators must have excellent concentration to operate sophisticated electronic navigation, communications, computer, and radar equipment for long periods of time. They must be able to keep their concentration during strenuous flight maneuvers. They need to know manual navigation techniques as a backup for automated equipment. They may also have to locate and track aerial, submarine, or surface targets and to operate weapons systems. The ability to work as a team with their pilot and other air crew is essential.

To advance in rank, navigators must have superior records of performance throughout their careers and be proven leaders. They must use their initiative to develop their skills, complete advanced education, and seek leadership positions within their squadrons. Their performance in nonflying duty assignments will also be critical for advancement.

Navigators compete with their peers for promotions and career-enhancing assignments. Only the best-qualified personnel are selected for advancement, and competition intensifies with each increase in rank.

SPECIALIZATION

Airplane navigators usually specialize in one type of airplane throughout their career. The basic airplane types include:

- High-performance jet fighters, fighter-bombers, or ground attack planes
- Long-range, strategic bombers
- Large tanker airplanes that provide in-flight refueling
- Special high-altitude reconnaissance planes
- Medium- or long-range antisubmarine patrol planes
- Long-range, multi-engine heavy transport planes

When assigned to nonflying duty tours, airplane navigators often specialize in areas that will help them in senior staff positions later in their careers. These "second careers" may be in areas such as engineering, computer science, or personnel management.

TRAINING

Initial training for airplane navigators includes about 12 months of demanding classroom and in-flight training. Training covers navigation, communications, principles of flight, major airplane systems, meteorology, and flight operations. Student navigators are given experience in day, night, aerobatic, and basic military airplane missions. After initial training, navigators are given advanced training in one type of airplane, such as a fighter, ground attack, bomber, reconnaissance, or transport plane. Navigators must continue on-the-job flight training throughout their careers.

Advanced training is available in areas such as ground attack tactics, dogfighting (air-to-air combat tactics), and air battle management. Navigators receive transition training whenever their airplane is modified or replaced by a new airplane. There are opportunities to attend graduate school for advanced technical or management degrees.

Navigators are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. They may be completed either by correspondence or full-time study.

Timeline

TYPICAL CAREER PATH

SQUADRON COMMANDER

Flight operations directors who have excellent navigation experience and who are outstanding leaders may advance to senior positions. At this level, they:

- Command a squadron, flight operations group, or air facility
- Advise headquarters commanders on squadron operations matters
- Fly missions to maintain their skills
- Direct flight operations of a major command

15-18 yrs

FLIGHT OPERATIONS DIRECTOR

Senior navigators who are experts in navigation and their flying missions and who are outstanding leaders may advance to become flight operations directors. At this level, they:

- Plan squadron flight missions
- Teach flight crews advanced mission operations and tactics
- Manage a squadron department, such as maintenance, training, or safety
- Advise squadron commanders on readiness of aircraft and crews
- Evaluate officers' flying, leadership, and management skills

9-11 yrs

SENIOR NAVIGATOR

After mastering the requirements of their assigned mission area and gaining experience as leaders, navigators may advance to become senior navigators. At this level, they:

- Plan and accompany their pilots on operational missions
- Instruct new navigators in their squadron duties and responsibilities
- Guide strategic bombers to their targets
- Teach student navigators how to use weapons systems and navigate
- Explain mission plans and assignments to flight crews

4 yrs

NAVIGATOR

Navigators who earn their wings are assigned to a flying squadron. Depending on the type of airplane and mission, they:

- Locate and track land targets, aircraft, ships, or submarines
- Monitor automated navigational systems using manual navigation techniques
- Operate communications equipment
- Plan missions and tactics with their pilots, considering weather, fuel, and aircraft loading
- Practice normal and emergency operating procedures

AIRPLANE PILOTS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Military pilots fly the most sophisticated combat and transport airplanes in the world. As a pilot, you will plan flying missions, brief your aircrews, and fly frequently to keep your performance at its peak. You begin your career in a squadron, flying the airplane you were trained to fly—a supersonic jet fighter, high-altitude reconnaissance plane, or huge cargo transport. As you gain experience and skill, you will serve in positions of increasing responsibility. There are opportunities to become a squadron commander.

DUTY ASSIGNMENT

Airplane pilots fly their airplanes to and from military bases in the U.S. and overseas. Some fly airplanes that take off and land on aircraft carriers at sea. Pilots are usually assigned to flying squadrons made up of 10 to 25 airplanes and the crews needed to fly and maintain them. Pilots of long-range airplanes, such as bombers, tankers, and transports are usually assigned to bases in the U.S. These pilots have good opportunities for overseas flights. Pilots of fighter, fighter-bomber, or ground attack airplanes have excellent opportunities for overseas duty, particularly in Europe and the Pacific. At some point in their careers, pilots are usually assigned to jobs that do not require them to fly. These assignments may be with headquarters staff or in a different occupation entirely.

RELATED MILITARY OCCUPATIONS

If you are interested in a flying career, you may also want to consider a career as a helicopter pilot or an airplane navigator. See the Transportation Occupations cluster in the Military Occupations section of this book for descriptions of these occupations. The career of airplane navigators is also described in the previous military officer career description.

Profile: Lance Hogan

Lieutenant Colonel Lance Hogan knew he wanted to be a fighter pilot from the time he was young. Hearing the stories of his two uncles who had flown fighter planes in World War II and seeing the Thunderbirds flight demonstration team sparked his interest. Lance worked his way through college in Louisiana. When he received his degree, he joined the Air Force.

Lance was first in his flight training class. He chose to specialize in the A-7 Corsair II attack fighter, flying as the on-scene commander for search and rescue operations. His first assignment was to one of the original Flying Tiger squadrons.

Lance really enjoyed the demanding search and rescue missions. He practiced ground attack and coordinating artillery, naval gunfire, air strikes, and other resources required to rescue air crews shot down in enemy territory. During this tour he was promoted to captain.

After a year of special staff training in Washington, D.C., Lance went back to flying, this time in the F-4 Phantom II. Lance served a 1-year tour at Taegu Airbase in Korea. As the squadron scheduling officer, he managed all flight training requirements for the squadron. During this tour, he was promoted to major.

His duties at Taegu prepared him for his next assignment at MacDill Air Force Base (AFB), FL. Here, Lance taught pilots who had just earned their wings air-to-ground combat tactics. He also learned to fly the new F-16 fighter and became one of the first instructor pilots for this aircraft.

At MacDill, Lance was selected for very special duty. He and his family moved to Nellis AFB, NV. In an unusual tour, Lance flew 4-1/2 years with the elite Thunderbirds flight demonstration team. Normally, pilots who are selected to join the Thunderbirds stay only 2 years. Lance toured Europe, South America, and almost all 50 states, including Alaska and Hawaii.

Now with Air Force staff at Langley AFB, VA, Lance coordinates all activities of Air Force tactical demonstration aircraft and squadrons worldwide. In his off-duty time, he is completing a master's degree in aerospace science. "I like my job now," he says, "but I am looking forward to flying again." He hopes to command a squadron sometime in the near future.

ADVANCEMENT

Airplane pilots must be outstanding fliers. They must be able to fly their airplanes safely through the maneuvers required by their missions. They must be experts in their plane's fuel, flight control, electrical, and weapons systems. All pilots are regularly tested on their knowledge of airplane systems in written examinations, "check flights," and inflight simulators.

To advance, pilots must be superb aviators and maintain their skills throughout their careers. They must have consistently excellent flying records and be proven leaders. Pilots are expected to use their initiative to develop their skills, complete advanced education, and seek leadership positions in their squadron. Their performance in nonflying duty assignments will also be critical for advancement.

Pilots compete with their peers for promotion and career-enhancing assignments. Only the best-qualified personnel are selected for advancement, and competition intensifies with each increase in rank.

SPECIALIZATION

Airplane pilots usually specialize in one type of airplane throughout their careers. The basic airplane types include:

- High-performance jet fighters, fighter-bombers, or ground attack planes
- Long-range, strategic bombers
- Large tanker airplanes that provide in-flight refueling
- Special high-altitude reconnaissance planes
- Medium- or long-range anti-submarine patrol planes
- Long-range multi-engine heavy transport planes
- Lightweight utility planes

When assigned to nonflying duty tours, airplane pilots often specialize in areas that will help them in senior staff positions later in their careers. These "second careers" may be in areas such as engineering, computer science, or personnel management.

TRAINING

Initial training for pilots includes up to 18 months of demanding classroom and in-flight training. Student pilots learn principles of aerodynamics, major airplane systems, meteorology, navigation, communications, and federal and service flight rules and regulations. They practice flying in all types of weather, day and night. They also practice flying in formation and basic aerobatics. After initial training, pilots are given advanced training in one type of airplane, such as a fighter, ground attack, bomber, reconnaissance, or transport plane. Pilots must continue on-the-job flight training throughout their careers.

Advanced training is available in areas such as ground attack tactics, dogfighting (air-to-air combat tactics), and directing air strikes. Pilots receive transition training whenever their airplanes are modified or replaced by new generation airplanes. There are opportunities to attend graduate school for advanced technical and management degrees.

Pilots are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. They may be completed either by correspondence or full-time study.

TYPICAL CAREER PATH

Timeline

COMMAND PILOT

Excellent flight leaders who have broad experience in flying operations and who are outstanding leaders may advance to senior positions. At this level, they:

- Command a squadron, flight operations group, or air facility
- Direct flight operations of a major flying unit
- Fly missions to maintain expert flying skills
- Advise headquarters commanders on squadron operations

15 18 yrs

FLIGHT LEADER

Pilots who are expert in their flying mission and demonstrate outstanding leadership qualities may advance to become flight leaders. At this level, they:

- Lead several airplanes on flying missions, such as airstrikes, patrols, or transporting cargo
- Instruct pilots in squadron missions and tactics
- Evaluate pilots' flying, leadership, and management skills
- Manage a squadron department, such as maintenance, training, or safety
- Manage combat missions, planning target selections and personnel utilization

9-11 yrs

SENIOR PILOT

After mastering the requirements of their assigned mission area and gaining experience as leaders, pilots may advance to become senior pilots. Senior pilots:

- Plan and fly operational missions
- Fly as first pilot in a large airplane
- Lead flights of two or more aircraft on missions
- Instruct new pilots in their squadron duties and responsibilities
- Teach student pilots to fly
- Explain mission plans and assignments to flight crews

4 yrs

PILOT

Pilots who earn their wings are assigned to a flying squadron. Depending on the type of aircraft and mission, they:

- Plan flights, considering weather, fuel, and aircraft loading
- Fly missions alone, as part of a group of airplanes, or as copilot in a large airplane
- Plan missions and tactics
- Practice emergency and normal operating procedures

CIVIL ENGINEERS

ARMY
NAVY
AIR FORCE
COAST GUARD

Civil engineers are the military's builders. In their varied careers they may: build air strips in the jungle; direct construction or maintenance of military bases; or work alongside combat troops, physically altering the battlefield to help them advance or hold their positions. You begin your career managing construction contracts, directing base utility and maintenance services, or leading a group of enlisted combat engineers. As you gain experience, you will serve in positions of increasing responsibility. There are opportunities to become director of engineering at a military base or to command a battalion of combat engineers.

DUTY ASSIGNMENT

Civil engineers work primarily in engineering offices or temporary construction facilities on military bases in the U.S. and overseas. Civil engineers assigned to combat engineering units may spend much time in the field during combat exercises and field maneuvers. Most have opportunities for overseas assignment, particularly in Europe and the Pacific Islands.

SPECIALIZATION

Civil engineers typically spend their career developing expertise in several areas. Major areas include combat engineering, contract management, and public works. In each assignment, civil engineers use their engineering background, career experience, and increasing leadership ability.

RELATED MILITARY OCCUPATIONS

If you are interested in a career as a military civil engineer, you may also want to consider a career in another technical field. See the Engineering, Science, and Technical Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

Profile: Philip Thompson

Phil Thompson joined the Navy Reserves while he was in college studying civil engineering. "I looked into the Navy's Civil Engineer Corps," he says, "and liked what I saw." After graduation, he went to Officer Candidate School in Newport, RI, and then to Civil Engineer Corps Officer School in Port Hueneme, CA.

Phil's first assignment was to Guam. As a new Civil Engineer Corps ensign (O-1), Phil had 400 civilians working for him. He also had a large budget and responsibility for maintaining all Navy and Marine buildings and housing on the island. In his second year he was assigned as the Activities Civil Engineer (ACE). He managed a budget of $4 million and a large number of civilian workers. Phil liked the job so much that he asked to extend his tour of duty.

Phil enjoyed the public works side of civil engineering. For his next assignment, he went to the Naval Air Station Whidbey Island, WA. There, he directed facility maintenance forces, maintained three runways, two outlying airfields, roads, water, power, transportation, and everything needed to keep the base operating year-round.

Assigned next to Vietnam, he directed the construction of housing for Vietnamese military personnel and their dependents. His crews for this project were the famous Navy "SeaBee" construction battalions.

Phil's most memorable tour was at the naval base at Guantanamo Bay, Cuba. He directed contractors building a water desalinization plant and an addition to the power plant. But his greatest satisfaction came from completely remodeling every home on the base. "We gutted and remade hot, uncomfortable houses into modern, fully air-conditioned units. It was really appreciated by the Navy and Marine Corps personnel and dependents living at Guantanamo," Phil says.

From his post in the Pentagon, where he monitors Navy planning and construction in the entire continental United States, Commander Phil Thompson is looking forward to taking some time off when he retires this fall. Looking back he says, "It's been 22 years of fun."

ADVANCEMENT

To perform their wide range of duties, military civil engineers must be flexible, excellent leaders, and have superior analytical and communications skills. They may come from any of several engineering backgrounds. They apply their education and abilities to solve problems, supervise contractors, lead troops, and give advice on contracts and designs.

To advance, civil engineers must have excellent professional skills and managerial abilities. To build a record of excellent performance, they must win the confidence of the people for whom they work and those who work for them. As they gain experience, they serve in positions of greater responsibility. They manage larger contracts, lead more people, and direct projects of increasing complexity. An excellent performance record is essential to success. An advanced engineering or management degree may increase chances for promotion.

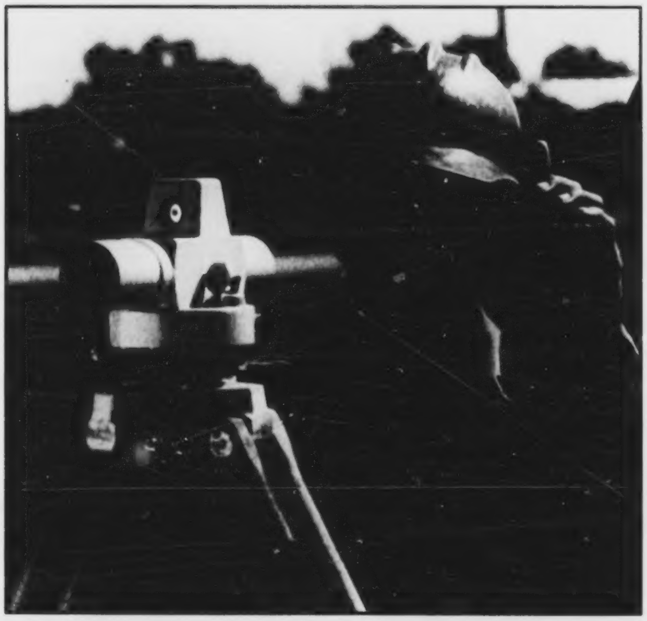
Engineers compete with their peers for promotion and career-enhancing assignments. Only the best-qualified personnel are selected for advancement and competition intensifies with each increase in rank.

TRAINING

Initial training for civil engineers is a combination of classroom and field training. Courses are taught in: managing contracts, budgeting, combat engineering techniques, and leadership. To prepare for their next assignment, some engineers receive specialty training in such areas as environmental protection, fire prevention/protection, or mapping (cartography).

Advanced training is available in leadership and combat engineering. Civil engineers may earn a graduate engineering degree in a program funded by their service. Many others obtain degrees on their own time.

Civil engineers are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. They may be completed by correspondence or full-time study.



TYPICAL CAREER PATH

DIRECTOR OF ENGINEERING

Engineering staff officers with outstanding records of leadership and technical expertise may be selected to direct major engineering activities or units. At this level, they:

- Command combat engineering or construction battalions of 500 to 750 military personnel
- Direct civil engineering operations at a military base
- Advise base or area commanders on civil engineering matters
- Evaluate construction bids submitted by civilian contractors
- Direct planning and management of major engineering projects

ENGINEERING STAFF OFFICER

Senior engineers who show excellent leadership and technical ability may advance to become engineering staff officers. At this level, they:

- Analyze and recommend design specifications for buildings, bridges, roads, and other structures
- Determine construction project costs
- Lead other civil engineers in managing construction and maintenance contracts for a military base
- Advise senior commanders on combat and other engineering matters

SENIOR ENGINEER

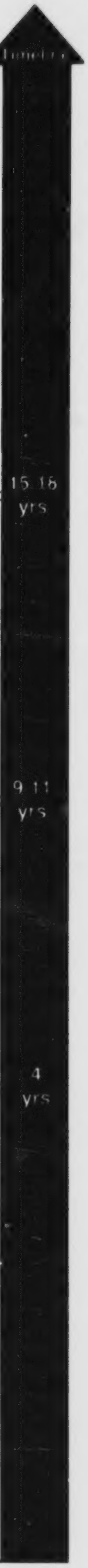
Civil engineers who have performed well in their first assignments may advance to become senior engineers. At this level, they:

- Command combat engineering companies of 65 to 200 enlisted personnel
- Plan and manage programs to maintain utilities, buildings, or roads on a military base
- Train new civil engineer officers
- Review plans and designs for engineering projects

CIVIL ENGINEER

After initial training, civil engineers are given their first duty assignment. Here they may:

- Direct military and civilian personnel in maintaining and constructing buildings
- Lead combat engineers in missions such as building fortifications, assembling mobile bridges, or preparing mine fields
- Monitor contractors to ensure their work meets contract specifications
- Lead and train enlisted personnel in construction techniques



INFANTRY OFFICERS

ARMY
MARINE CORPS

Infantry officers lead their troops through rigorous training and maneuvers. As an infantry officer, you will make sure your men are in top shape, well trained, and properly equipped. You begin your career leading a platoon of 30 to 50 infantrymen. As you gain leadership and tactical experience, you will serve in positions of increasing responsibility. There are opportunities to become battalion commander.

DUTY ASSIGNMENT

Infantry officers serve in infantry units at military bases in the U.S. and overseas. They work in offices and spend much time in the field. The new officer's first assignment is to train and lead a platoon of 30 to 50 soldiers. Later in their career, infantry officers command a company of 100 to 200 soldiers and perhaps a battalion of 500 to 1,000 soldiers. There are excellent opportunities for overseas assignment in Europe and the Pacific Islands.

SPECIALIZATION

Infantry officers may specialize in amphibious warfare (attacking land from the water), airborne operations (parachuting into battle), special operations, or Ranger operations (Rangers are special units skilled in combat in many different geographical areas). Infantry officers may also develop secondary career specialties through advanced education or special experience.

RELATED MILITARY OCCUPATIONS

If you are interested in a combat career, you may also want to consider a career as an artillery, tank, missile systems, or special operations officer. See the Combat Specialty Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

Profile: Wayne Garvey

Growing up in a small town in Texas, Wayne Garvey enjoyed working outdoors and knew he would like the life of a soldier. During his ROTC training at the Virginia Military Institute (VMI), Wayne heard an infantry officer talk about his profession. "I was impressed by his orientation to people and the emphasis the Army places on individual and team effort, professionalism, and dedication."

Wayne graduated from VMI, earning a commission in the Reserves. He qualified for a delayed entry to active duty, and used the time to go to law school. After admission to the bar, he began active duty. His first assignment following basic infantry and airborne training was to the 101st Airborne, Fort Campbell, KY, as a weapons platoon leader. Wayne also served as a company executive officer and as battalion adjutant, monitoring administration.

His next tour was in Vietnam, as a platoon leader with the 1st Air Cavalry. Wayne led his platoon in many combat actions and earned several decorations, including the silver star, the nation's third highest award for gallantry. He also spent part of his tour on the headquarters staff before returning home. During this tour, he advanced to captain.

With his service obligation complete, Wayne left the Army. He practiced law and was very successful. "But," he says, "I missed the Army every day of those 2 years." He and his wife made the decision together to return to Army life.

Back on active duty, Wayne returned to Vietnam, commanding a rifle company. He again earned several decorations. Following this tour, Wayne returned to the States to teach tactics at the Army Military Academy at West Point.

Since West Point, Wayne has served several tours on various Army staffs; in one tour he assigned infantry officers to positions throughout the world. He also commanded an infantry battalion in Korea. "This was a real milestone," he says, "a real highlight of my career to date."

Recently selected for the highest level officers' courses at the Army War College, Wayne says about his service, "Even the bad days have been good. I have really enjoyed my career!"

ADVANCEMENT

Infantry officers must be quick-thinking, aggressive leaders to be able to train and motivate the soldiers they command.

To be successful platoon leaders, infantry officers must master infantry operations and weapons and show outstanding leadership abilities. To advance to company commander, they must master all tactical aspects of the infantry, and demonstrate ability to coordinate combat actions with artillery, armor, airlift, and air strike support units. To advance to senior command positions, they must have successfully commanded and demonstrated potential at the company level. Outstanding performance in every duty assignment is essential for advancement. Officers with the broadest range of infantry skills and best records of leadership have the best chance for promotion.

Infantry officers compete with their peers for promotion and career-enhancing assignments. Only the best-qualified personnel are selected for advancement and competition intensifies with each increase in rank.

TRAINING

Initial training for infantry officers includes up to 6 months of training in the classroom and in the field. Training covers infantry weapons, combat tactics, infantry organization, and military leadership. Many officers also receive specialized training to prepare them for their first assignment. They may be trained in combat skills such as parachute jumping, Ranger training, or amphibious landings.

Advanced training is provided to prepare infantry officers for more senior leadership roles. Courses are taught primarily in coordinating infantry and mechanized infantry with other combat units.

Infantry officers are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of such military subjects as strategy, tactics, and planning large-scale operations. They may be completed by correspondence or full-time study.

Timeline

TYPICAL CAREER PATH

BATTALION COMMANDER

Outstanding officers with a broad range of infantry experience may advance to senior officer positions. At this level, they:

- Command an infantry battalion of 500 to 1,000 men
- Plan training exercises or missions
- Instruct company commanders on mission assignments and objectives
- Coordinate battle plans with armor, artillery, and air support units

15-18 yrs

INFANTRY STAFF OFFICER

Company commanders with demonstrated leadership skills may advance to become infantry staff officers. In this position, they:

- Assist their battalion commander in administration and management duties
- Manage a specialized function such as logistics or operations for a battalion or headquarters staff
- Teach infantry courses
- Resolve unit supply, maintenance, or personnel problems
- Advise senior commanders on infantry operations and readiness

9-11 yrs

COMPANY COMMANDER

Platoon leaders who have shown leadership ability may advance to become company commanders. At this level, they:

- Command an infantry company consisting of several platoons
- Develop and carry out battle plans to support battalion objectives
- Develop, schedule, and carry out training plans and field exercises
- Explain battle plans and assign objectives to platoon leaders

4 yrs

PLATOON LEADER

After initial training, infantry officers are assigned to lead a platoon. Platoon leaders:

- Train and lead an infantry platoon of 30 to 50 soldiers
- Inspect troops, barracks, and equipment
- Plan daily conditioning programs for the platoon or the entire company
- Lead the platoon on combat training exercises
- Direct the care and maintenance of weapons, radios, and other equipment assigned to the platoon

This career is open only to men.

INTELLIGENCE OFFICERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Intelligence officers are the eyes and ears of the military. The information they deal with is vital to our national security. As an intelligence officer, you will analyze information on the military forces, governments, and people of other countries. You begin your career collecting and giving combat commanders briefings on information from sources such as satellite and aerial photographs, intercepted communications, and observers in the field. As you gain experience, you will serve in positions of increasing responsibility. There are opportunities to become intelligence operations director of an intelligence-gathering unit or of a large combat force on land or sea.

DUTY ASSIGNMENTS

Most intelligence officers work at military bases in the U.S. and overseas. Many work in electronic data processing and evaluation centers or photographic interpretation labs. Some work aboard ships or airplanes with sophisticated intelligence-gathering equipment. Many intelligence officers have an opportunity to work in Washington, D.C., where much intelligence planning and evaluation takes place. Intelligence officers have good opportunities for overseas duty.

SPECIALIZATION

Intelligence officers typically specialize in one area of intelligence early in their career. They expand on that foundation as they advance. Areas of specialization include communications intelligence (information from intercepted radio voice communications), signals intelligence (data from non-voice coded radio and radar signals), imagery intelligence (information from satellite and aircraft images), combat intelligence, and human intelligence (information provided by agents and other individuals in the field).

Profile: Theresa Alvarez

Theresa "Teri" Alvarez signed up for a Marine training program one summer in college. "It sounded interesting," she says, "and it carried no obligation." Teri and 6 friends went to training that summer. After graduation, 3 of them went on to Officer Candidate School and became Marine officers.

Teri decided to enter the intelligence field as an interrogator/translator. She was assigned to Hawaii as an intelligence analyst for Southeast Asia. As part of her duties, she prepared and gave briefings to senior officers served by her unit.

To further develop her leadership abilities, she was assigned to the Officer Candidate School in Quantico, VA. There, Teri taught several classes and counseled women officer candidates. She says, "I watched the women walk in and become Marine officers—leaving more confident and professional. It was one of my most enjoyable assignments."

After attending a special 9-month intelligence school to prepare her for assignment to the Defense Intelligence Agency (DIA), Teri reported for duty in Washington, D.C. as a Marine captain. In this post she developed a situational model to alert intelligence planners to developing threats all over the world. She also prepared a training course for threat analysts in different intelligence agencies. For her work during this tour, she was awarded the newly authorized Defense Meritorious Service Medal.

After being selected for promotion to major, Teri went full-time to Command and Staff College. She was then assigned as the first woman to hold a position as a division level (G-2) intelligence officer. She directed the group that provided intelligence services to the 2nd Marine Division; roughly one-third of the Marine Corps fighting force.

Later assignments included Okinawa and the Marine Headquarters in Washington, D.C., where she works now, planning and analyzing Marine Corps intelligence activities. As a lieutenant colonel, she is looking forward to her next assignment. She says, "I am eager for more responsibility. I really like the challenge and the opportunity to advance in a field that is so important to the Marine Corps and the nation."

ADVANCEMENT

Intelligence officers serve in positions of great sensitivity. They analyze information vital to national security and prepare it for combat commanders around the world. Intelligence officers must be aggressively resourceful and analytical, and have excellent speaking and writing ability. In perhaps no other occupation is so much trust placed in individuals so early in their careers. After mastering the basic analytical skills, intelligence officers apply them in positions of increasing responsibility.

To advance, intelligence officers must have a record of consistently superior performance. Because military operations depend on accurate intelligence, there is no room for mistakes. Intelligence officers must win the respect and trust of their commanders and prove themselves as good leaders. They must often learn computer and related skills.

Intelligence officers compete with their peers for promotion and career-enhancing assignments. Only the best-qualified personnel are selected for advancement, and competition intensifies with each increase in rank.

TRAINING

Initial training for intelligence officers includes up to 6 months of intensive classroom study. Officers learn how to analyze data and prepare briefings. They are trained in techniques for gathering intelligence and learn the kinds of information combat commanders need to make decisions in battle. They also are briefed on world situations. Intelligence officers may receive specialized training in areas such as electronics, communications, or satellite photographic intelligence gathering.

Advanced training is available, usually to prepare intelligence officers for a specific assignment. Other advanced courses may be in special analysis of intelligence information from many sources.

Intelligence officers are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. These military courses may be completed either by correspondence or full-time study.

TYPICAL CAREER PATH

Timeline

INTELLIGENCE OPERATIONS DIRECTOR

Outstanding intelligence staff officers may advance to become intelligence operations directors. Here they:

- Direct intelligence services for air, land, or sea commands
- Coordinate their intelligence with other military and civilian intelligence agencies
- Determine the intelligence needed to support large combat forces
- Evaluate intelligence sources for accuracy and usefulness
- Brief top-level military leaders in areas of personal expertise

15-18 yrs

INTELLIGENCE STAFF OFFICER

Senior intelligence officers with excellent records of performance and leadership ability may advance to become intelligence staff officers. Typically, they:

- Brief senior-level staff and combat commanders on activities of enemy forces
- Direct a team of officers and enlisted personnel, compiling and analyzing intelligence information from all sources
- Confer with intelligence officers from other services and nations to share information
- Teach military intelligence courses

9-11 yrs

SENIOR INTELLIGENCE OFFICER

Intelligence officers with an excellent performance record may advance to become senior intelligence officers. At this level, they may:

- Analyze information from many sources of intelligence and prepare briefings or reports
- Gather information to support combat exercises and maneuvers
- Analyze potential security problems
- Train new intelligence officers in job duties

4 yrs

INTELLIGENCE OFFICER

After initial training, intelligence officers are assigned to specialized intelligence units or to air, sea, or ground combat units. Here they may:

- Research enemy force locations, size, and capability
- Analyze weaknesses and strengths of enemy forces
- Brief combat commanders or aircrews on research results
- Direct a small team of enlisted personnel intercepting and analyzing voice or other radio signals
- Interpret aerial and satellite photographs
- Debrief aircrews or ground combat teams returning from missions or patrols

LAWYERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Military lawyers, known as Judge Advocates General's (JAG) Corps officers, work for the largest "legal firms" in the world. As a military lawyer, you will prosecute or defend military personnel in courts-martial, counsel personnel on legal problems, and advise commanders in matters of law. You begin your career handling trials and providing legal services. As you gain experience, your assignments will become more challenging. There are opportunities to become a legal services director or a judge in a military court.

DUTY ASSIGNMENT

Most military lawyers work in legal offices and courtrooms on military bases in the U.S. and overseas. Some serve aboard large ships at sea or on the flagship of a fleet commander. Legal services officers and directors normally work at major command headquarters, on large military bases, or in Washington, D.C. There are good opportunities for overseas assignments.

SPECIALIZATION

Lawyers may gain special expertise through experience or advanced education. They may specialize in contract, labor, international, maritime, or criminal law.

Profile: Leighton Pierce

After college, Leighton Pierce was not challenged by his job with a large computer firm. After talking with a Marine officer friend, he decided to give the Marines a try. He graduated near the top of his officer training class and then spent a tour in Vietnam, after which he decided to make the Marine Corps his career.

However, cancer forced him from active duty. The Marine Corps treated him and, while he was on a temporary retirement, provided him with 100 percent medical disability pay and benefits. He took the opportunity to go to law school.

When he was given a clean bill of health, the Marines asked him if he would like to return to active duty as a lawyer. "My wife and I enjoyed the friends we had made and the travel," Leighton says, "so we decided to go back," leaving behind a successful civilian law practice.

He started his Marine law career with Naval Justice School, before practicing law for the military.

Leighton especially enjoyed courtroom practice in prosecution and defense, but was challenged by other legal service assignments as well. A high point in his career was a tour in Okinawa. "We loved the life there," he says. In that tour, he served as senior defense counsel, directing all trial defense cases and acting as the lead defense lawyer in many trials.

Since then, he and his family have enjoyed assignments in the United States and a tour in the Philippines. Leighton is now a lieutenant colonel in charge of legal support services, 2nd Force Service Support Group, directing 34 lawyers and 83 enlisted legal specialists. His group handles all military justice and administrative law for thousands of Marine Corps personnel stationed at Camp Lejeune, NC. He is looking forward to continuing his challenging and rewarding career.

ADVANCEMENT

Military lawyers must speak and write with ease and authority. They must be familiar with civilian and military law, as well as courtroom strategy. Creativity and perseverance are essential to research complex legal rulings and use them in court cases.

To advance, lawyers must continue to increase their knowledge of military, criminal, and civil law. They should have excellent legal performance and leadership records. Most lawyers obtain advanced degrees or specialties. However, they are also encouraged to broaden their experience through a variety of assignments. In later assignments, lawyers lead junior JAG officers as well as enlisted legal personnel.

Lawyers with a legal specialty and outstanding records of performance in a variety of assignments have the best opportunities to advance to senior positions. Only the best-qualified personnel are selected for advancement and competition intensifies with each increase in rank.

TRAINING

Lawyers entering the military must be graduates of an accredited law school. Initial training for lawyers is conducted by the service Judge Advocate General's school. Courses include introduction to military law, the military justice system, and officer leadership and management responsibilities. New lawyers train on the job in courtrooms and legal service offices.

Lawyers are expected to keep up with changes in laws, regulations, and legal procedures. They must continue to study and attend symposiums, conferences, and seminars throughout their careers. Many lawyers have opportunities to acquire specialties and advanced degrees. Advanced training typically opens up a range of assignments that would otherwise be unavailable.

Lawyers are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. These military courses may be completed by correspondence or occasionally by full-time study.

Timeline

TYPICAL CAREER PATH

LEGAL STAFF DIRECTOR

Legal staff officers with outstanding records of leadership and legal expertise may advance to become legal services directors. Here they may:

- Direct all activities of a legal services (Judge Advocate General's) office supporting local operational commands
- Set up prosecution or defense in courts-martial
- Advise senior staff and combat commanders on legal matters
- Serve as a judge on courts-martial

15-18 yrs

LEGAL STAFF OFFICERS

Outstanding senior lawyers may advance to become legal staff officers. At this level, they may:

- Advise commanders on specific legal topics (contract, labor, maritime, or international law)
- Defend or prosecute personnel in courts-martial that require lawyers of senior rank and expertise
- Direct lawyers and enlisted legal specialists in providing services to military personnel and their dependents
- Review contracts to determine if they meet legal requirements

9-11 yrs

SENIOR LAWYER

Lawyers who demonstrate the ability to interpret and work with law may advance to become senior lawyers. At this level, they:

- Advise commanders and senior staff officers on general legal issues
- Make sure policies and procedures comply with civil and military law
- Investigate liability claims
- Advise military personnel on legal matters

4 yrs

LAWYER

Following initial training, lawyers are assigned to Judge Advocate General's offices. Here they:

- Prosecute and defend military personnel in courts-martial
- Research cases using law libraries and computerized references
- Interview defendants and witnesses
- Prepare wills, adoption papers, and other personal legal documents

METEOROLOGISTS

ARMY
NAVY
AIR FORCE
MARINE CORPS

Accurate weather forecasts can save lives and equipment in military operations. As a meteorologist, you supervise enlisted weather observers and forecasters and advise operational commanders on changing weather conditions. You begin your career directing data collection and interpreting weather maps, observation data, and satellite information. As you gain leadership and forecasting skills, you will serve in positions of increasing responsibility. There are opportunities to become director of a major meteorological center in charge of a group of weather stations.

DUTY ASSIGNMENT

Most meteorology officers work in weather stations or weather support units at military bases in the U.S. and overseas. Some work in global weather centers. Others work in command and control centers aboard ships at sea. There are good opportunities for overseas assignment to military bases and outposts throughout the world, from the tropics to the north and south poles.

SPECIALIZATION

Meteorologists may specialize in the field in which they have an advanced degree. Specialties include oceanography, astrophysics, geophysics, and computer science. Typically, meteorologists serve in a variety of assignments, returning periodically to their specialty.

RELATED MILITARY OCCUPATIONS

If you are interested in a career as a meteorologist, you may also want to consider a career in oceanography or some other scientific or technical occupation. See the Engineering, Science, and Technical Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

Profile: Brian Christopher

As a child, Brian Christopher lived on a small farm and liked to watch the weather. He remembers trying to figure out what the weather would be when he was just 8 years old. However, it was not until he was working his way through college that Brian really decided meteorology was the career he wanted. He also had another goal — to serve in the Air Force.

His first assignment was to Plattsburg Air Force Base (AFB) in northern New York. There he developed and briefed weather forecasts for B-52 bomber and KC-135 tanker aircrews. The aircrews depended on the accuracy of his forecasts to fly safely and to protect planes on the ground from damage by severe weather. After 15 months, Brian became a weather officer for all of the bomber squadrons at the base. He briefed the wing commander daily and made sure the squadrons received good support concerning weather conditions.

Brian applied and was selected for fully funded studies at St. Louis University and earned a master's degree in meteorology. "After my degree, the technical assignments really opened up," he says. He became a technical consultant at Andrews AFB, MD, near Washington, D.C. There he developed new methods for using satellite data to predict weather in areas of the world with no ground observation stations. He also kept himself informed on what was going on in civilian meteorological science.

As he advanced, Brian filled more leadership roles. He played a part in the weather service's support in developing new weapons systems. As a major, he commanded a large weather station serving the Tactical Air Command's busiest training base, Luke AFB, AZ. He worked with the North American Air Defense Command in Colorado Springs and he was a key individual in efforts to modernize Air Force weather service equipment.

Today, Lieutenant Colonel Brian Christopher leads 65 meteorologists and enlisted weather specialists at the Global Weather Center at Offut AFB in Omaha, NB. His group serves all the armed services and supports missions ranging from major NATO exercises to missile launches and testing all over the world. "I enjoy my role as a leader," he says, "but I still like to pit my forecasting skills against Mother Nature."

ADVANCEMENT

Meteorologists must be able to forecast the weather accurately and to apply their expertise to research, military exercises, and strategic planning. Meteorologists begin by practicing short-term and extended forecasting, briefing flight crews, and directing enlisted weather observers. After mastering these skills, they work in larger weather stations serving more people and missions. In the Navy, meteorologists will also apply their knowledge to the field of oceanography.

To advance, meteorologists must make consistently accurate forecasts and show excellent leadership and management skills. Most senior meteorologists have an advanced degree in areas such as math, geophysics, astrophysics, oceanography, meteorology, and computer science. Outstanding performance and advanced education are keys to advancement in meteorology.

Meteorologists compete with their peers for promotion and career-enhancing assignments. Only the best-qualified personnel are selected for advancement and competition intensifies with each increase in rank.

TRAINING

Initial training for meteorologists includes up to 12 months of classroom instruction in weather observation, analysis, and forecasting. Instruction is also given on the impact of weather on military operations and the information needed by combat commanders. Military leadership is an important part of initial training.

Advanced training is given in such areas of specialization as interpreting satellite weather data and computer applications to forecasting. Most meteorologists earn advanced degrees in areas such as meteorology, oceanography, geophysics, astrophysics, or computer science. They may specialize in such fields as environmental effects on electronic equipment, solar forecasting, or acoustics in water. Some attend schools in programs funded by their service, while others obtain degrees on their own time.

Meteorologists are also given opportunities for professional military education to prepare them for senior officer positions. These programs include military subjects such as strategy, tactics, and forecasting requirements for planning large-scale operations. They may be completed by correspondence or full-time study.

TYPICAL CAREER PATH

Timeline

METEOROLOGY DIRECTOR

Meteorology staff officers with superior technical expertise and leadership ability may advance to direct meteorological centers. At this level, they may:

- Direct personnel predicting and monitoring global weather patterns
- Advise top-level military commanders on weather conditions
- Manage staff and weather planning for large geographic areas (such as northern Europe)
- Inspect weather facilities under their command

15-18 yrs

METEOROLOGY STAFF OFFICER

Senior meteorologists with records of excellent performance may advance to become meteorology staff officers. They may:

- Command large weather stations
- Advise scientists and technicians designing, developing, and testing new weapons systems
- Direct weather computer centers
- Confer with oceanographers to support operations at sea
- Advise combat commanders and their staffs on weather conditions

9-11 yrs

SENIOR METEOROLOGIST

Meteorologists who have excellent technical and leadership skills advance to become senior meteorologists. At this level, they may:

- Command a small weather station or outlying weather facility
- Train and evaluate new meteorologists and enlisted personnel
- Send hazardous weather warnings
- Direct preparation of weather forecasts and local advisories

4 yrs

METEOROLOGIST

After initial training, new meteorologists are assigned to base weather stations or outlying weather support facilities. Here they:

- Direct enlisted personnel gathering weather data from surface instruments, balloons, radar, and satellites
- Analyze data and information from charts and other weather stations
- Prepare short-term and long-range weather forecasts
- Brief aircrews on weather conditions

NUCLEAR ENGINEERS

ARMY
NAVY
AIR FORCE
MARINE CORPS

Career nuclear engineers conduct research and develop projects using the most advanced technology. As a nuclear engineer, you may work with lasers, particle beams, weapons effects, or space environments. Your contributions will be vital to maintaining the nation's defense. You begin your career in a laboratory. You will work with and learn from some of the world's foremost nuclear engineers. As you develop your knowledge and leadership abilities, you will take on greater responsibility. There are opportunities to advance to director of a military research laboratory.

DUTY ASSIGNMENT

Nuclear engineers work in laboratories, offices, and sometimes in the field. During a typical career, a nuclear engineer performs and directs research and serves with military staffs. Almost all assignments are in the United States. However, there are a few opportunities for assignment abroad.

SPECIALIZATION

Nuclear engineers specialize in military applications of nuclear energy. They conduct research, direct design and development projects, and manage purchasing contracts. Most seek to become an expert in one area of the field. Some areas of research are:

- Nuclear reactor design for ships, submarines, or land (safety, performance, theory, and testing)
- Nuclear reactor operation
- Nuclear safety (storage and handling of fuel, reactors, and weapons)
- Nuclear effects on electronic and other equipment
- Technical aspects of nuclear weapons policy

As nuclear engineers advance to senior officer positions, they maintain their specialized knowledge and increase their general knowledge of the field.

Profile: Peter Flambeau

Lieutenant Colonel Pete Flambeau enjoyed physics in high school. The man who was his physics teacher and football coach suggested college and a major in physics. Pete decided to take his advice and graduated with honors from a college in Massachusetts.

Pete joined the ROTC in his junior year in college. When he completed his bachelor's degree, he requested and received a delayed entry to active duty so he could complete a master's degree in nuclear physics. When he entered active duty as a second lieutenant, the Air Force needed many officers as weapons controllers. He trained at Tyndall Air Force Base (AFB), FL, and then for 2 years controlled fighter interceptors from MacDill, FL and Myrtle Beach, SC.

Pete and his family enjoyed Air Force life. When his service obligation ended, he decided to continue a career in the service. Pete wanted to redirect his career to physics, so he applied to the Air Force Institute of Technology in Dayton, OH. He was accepted and completed studies for a doctoral degree (Ph.D.) in nuclear effects. He was promoted to captain while he was at school.

To conduct research for his Ph.D., he was assigned to the Air Force Weapons Laboratory in Albuquerque, NM. He also worked on other projects, including computer predictions of nuclear weapons effects.

Once Pete earned his Ph.D., his leadership duties increased. He led research for several important projects, including the MX ballistic missile program. He also spent a tour teaching physics at the Air Force Academy. "I really enjoyed working with the cadets," Pete says. "It was a rewarding tour." Promoted to major, he was selected to attend Air Force Command and Staff College full time for advanced professional military education.

Today Pete is deputy director of Space Physics at the Air Force Geophysics Laboratory in Hanscom, MA. Smiling, he says, "After assignments all over North America, I now live 5 miles from the place I was born and raised."

Pete says his career has been exciting. "I have had variety and challenges conducting research and leading the scientists who worked for me." He looks forward to being the chief director of critical space systems projects over the next several years.

ADVANCEMENT

Nuclear engineers conduct research, design weapons and related systems, and manage projects critical to the nation's defense. They must understand the fundamental principles of physics, math, and other areas of science. They must master the most recent advances of an incredibly complex technological profession. They also need to become excellent leaders and managers.

To advance, nuclear engineers must develop their research skills. They must be able to design research programs, tests, and experiments. They work constantly to keep abreast of innovations in the field. It is essential for nuclear engineers to have an advanced degree (master's or doctorate) and there are many opportunities for fully-funded education to achieve this career milestone. Nuclear engineers must also develop their leadership skills to advance to the most senior levels in the profession.

The Air Force is the only service with a distinct career path in nuclear engineering. In the Army, Navy, and Marine Corps, officers typically enter nuclear engineering after qualifying in another occupation. They most often enter the field after 6 to 10 years of service and attending graduate school for a nuclear engineering degree. In these cases, nuclear engineering is a secondary occupational specialty and not a career, although officers may periodically return to assignments related to nuclear engineering.

RELATED MILITARY OCCUPATIONS

If you are interested in a career in nuclear engineering, you may also want to consider a career as a physicist, computer systems engineer, electrical and electronics engineer, or chemist. See the Engineering, Science, and Technical Occupations cluster in the Military Occupations section of this book for descriptions of these occupations.

TRAINING

Initial training for most nuclear engineers is on the job at a military-run laboratory. Nuclear engineers typically enter the service with a master's or bachelor's degree in physics, nuclear engineering, or a related field. After one or two tours in a laboratory, most nuclear engineers attend graduate school funded by their service. They earn a Ph.D. or a master's degree. The course work for their degree usually includes research in an area of direct interest both to them and to the service.

Nuclear engineers are encouraged to complete professional military education programs to prepare them for senior officer positions. These programs involve study of military subjects such as leadership, strategy, tactics, and planning large-scale operations. They may be completed by correspondence or full-time study.

Timeline

TYPICAL CAREER PATH

LABORATORY DIRECTOR

Outstanding nuclear engineering staff officers with career-long records of top performance as leaders, managers, and expert nuclear engineers may advance to become laboratory directors. At this time in their career, they:

- Command a research laboratory, monitoring research, directing research, and leading teams of scientists and technicians
- Develop and consult on military service research and development strategy
- Provide expert advice to national-level staffs
- Manage government weapons acquisition programs

15-18 yrs

NUCLEAR ENGINEERING STAFF OFFICER

Senior nuclear engineers who have excellent research and managerial skills may advance to become nuclear engineering staff officers. Here they:

- Manage research projects, directing civilian and military scientists
- Provide senior military staffs with expert advice on matters concerning nuclear weapons
- Assist scientists from many other disciplines in solving shared research or production problems
- Conduct independent research in a special area of expertise

9-11 yrs

SENIOR NUCLEAR ENGINEER

Nuclear engineers who have demonstrated technical proficiency and the potential to become excellent researchers and leaders may advance to become senior nuclear engineers. At this level, they may:

- Conduct basic and applied research in a laboratory
- Complete a master's degree or Ph.D. in an area of nuclear engineering
- Teach courses in their field or specialty
- Provide technical direction for research performed by contractors, universities, or government research laboratories.

4 yrs

NUCLEAR ENGINEER

Following initial training, new nuclear engineers are assigned to research and development laboratories, test sites, or nuclear reactor prototypes. Nuclear engineers:

- Work with experienced research scientists on projects such as effects of the outer space electromagnetic environment on people and electronic equipment, laser and particle beam technology, weapons design, or effects of nuclear weapons on military equipment
- Develop professional research skills
- Give technical support to projects demanding knowledge in nuclear engineering

PHYSICIANS AND SURGEONS

ARMY
NAVY
AIR FORCE

Military physicians and surgeons lead health care teams in the field and in military hospitals and clinics around the world. As a physician or surgeon you will diagnose and treat military personnel and their family members. You begin your career treating patients under the direction of an experienced staff doctor. As your knowledge and skills increase, you will specialize in a medical field. There are opportunities to become medical director of a hospital or clinic.

DUTY ASSIGNMENT

Most physicians and surgeons work in clinics, hospitals, and medical centers at military bases in the U.S. and overseas. Some work aboard naval vessels or hospital ships. Many serve temporary duty assignments in field hospitals during combat exercises and maneuvers. The military services strive to provide doctors with a stable work environment. As a result, physicians and surgeons often serve extended duty assignments at a single hospital in the U.S., Europe, or the Pacific.

SPECIALIZATION

Physicians and surgeons specialize as they gain experience and education. For physicians, typical specialties include family practice, pediatrics (providing care from birth to adolescence), and endocrinology (treating disorders caused by imbalances and diseases of the body's system of internal glands). Surgeons begin in general surgery and typically specialize in neurosurgery (surgery involving the brain and central nervous system), heart surgery, or cosmetic/reconstructive surgery.

Profile: Anthony Rugieri

Tony Rugieri enjoyed biology and wanted to become a doctor. He chose the Army because of the educational opportunities it offered for obtaining a medical degree. "The Army internship gave doctors a chance to rotate in departments and to practice many medical specialties," he says. Tony's first assignment was directing emergency room services at a large hospital near Washington, D.C.

In his next assignment, Tony went to Vietnam. He found the life of a combat doctor challenging. He earned two bronze stars; one for valor and one for exceptionally meritorious service. After this tour, he decided to "stay awhile" in Army medicine.

Returning from Vietnam, Tony was selected for a fully-funded advanced training program in internal medicine. He stayed on at the hospital where he trained and served a year as staff physician in internal medicine.

After a tour with the Office of the Army Surgeon General in Washington, D.C., Tony and his family enjoyed a tour in Germany together. Tony was the chief of internal medicine at an Army hospital and followed this assignment with a position as chief of hospital clinics and community health services.

In Germany, Tony qualified for certification in family practice medicine. This was a new program in military medicine. As one of the first doctors qualified, Tony returned to the United States and became the chief of family services at a large hospital on the East Coast. He also directed a residency program for doctors in advanced training.

Today, Tony is a colonel, directing quality assurance for the Surgeon General of the Army. Tony says, "One of the best things about my career has been the opportunity to work in many different jobs. I am always looking forward to my next assignment."

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ADVANCEMENT

Military physicians and surgeons must have outstanding stamina, perseverance, and a desire to serve others. They must be scientifically astute and able to communicate well in speaking and writing. They are expected to learn and train continually throughout their career.

To advance, physicians and surgeons must be superb medical practitioners. They must be expert observers to diagnose illness or injury. They need excellent skills in gathering, organizing, and analyzing information to make accurate diagnoses and plan treatments. Their professional skills must continue to develop, and they must demonstrate their ability to lead and train younger doctors. When assigned to teaching hospitals, doctors are evaluated on their ability to instruct in both classroom and patient situations.

Physicians and surgeons who have excellent records of performance, leadership, and continuing education may advance to senior positions. Only the best-qualified personnel are selected for advancement, and competition is intense for promotions and career-enhancing duty assignments.

RELATED MILITARY OCCUPATIONS

If you are interested in a medical career, you may also want to consider other military medical occupations. See the Health Diagnosing and Treating Practitioner Occupations cluster in the Military Occupations section of this book for descriptions of these occupations. The nursing career is also described in the next military officer career path description.

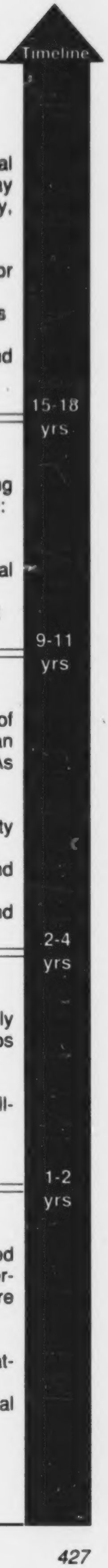
TRAINING

Initial training for physicians and surgeons includes basic orientation in military medical service administrative, professional, and military policies. Throughout their careers, physicians and surgeons are expected to keep pace with advances in medicine by attending professional symposiums and seminars and by reading technical literature.

Almost all physicians and surgeons will attend fully funded programs to obtain advanced medical specialties. Physicians specialize in a nonsurgical branch of medicine, and surgeons in a branch of surgery. Specialty education may take place in military or civilian teaching hospitals. Programs may require 1 or more years to complete.

Physicians and surgeons are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. These courses are usually completed by correspondence, but a few doctors attend full-time courses.

TYPICAL CAREER PATH



MEDICAL DIRECTOR

Staff doctors with outstanding medical or surgical ability and outstanding records of leadership may advance to become medical directors. Typically, they:

- Direct medical services at a military hospital or large clinic
- Conduct a limited practice to maintain their skills
- Direct training of interns and residents
- Confer with staff doctors to verify diagnoses and treatments
- Evaluate staff doctors

STAFF DOCTOR

Resident doctors who complete specialty training may become staff doctors. At this level, they may:

- Practice in their specialty
- Supervise and advise residents, general medical officers, interns, and students
- Serve as chief of a clinic or medical department
- Evaluate resident doctors

RESIDENT DOCTOR

General medical officers with 1 to 3 years of excellent performance return to military or civilian teaching hospitals to gain medical specialties. As residents, they may:

- Complete rigorous programs of study in a specialty
- Instruct interns and medical students
- Conduct medical "rounds" to supervise interns and students and care for their own patients
- Meet with hospital staff to discuss cases and procedures

GENERAL MEDICAL OFFICER

Doctors who complete their internships are usually assigned to hospitals, clinics, or, possibly, large ships as general medical officers. They:

- Examine patients, and diagnose and treat illnesses
- Order X-rays, tests, and medication
- Conduct medical "rounds"

INTERN

Medical school graduates who have not completed their internship training serve as interns in a supervised program of medical practice training. Here they:

- Work in a teaching hospital, diagnosing and treating patients
- Accompany resident and staff doctors on medical "rounds" to evaluate patient condition
- Help train medical students

REGISTERED NURSES

ARMY
NAVY
AIR FORCE

Profile: Janice Kendall

When she was 3 years old, Navy captain Janice Kendall had an attack of appendicitis. She spent months in the hospital. She says, "I was so impressed with the nurses who cared for me that I knew I wanted to be one too."

Janice, a Canadian, went to diploma school, then did more work to train in psychiatric nursing. After practicing several years, she tried nursing in the United States. There, an uncle in the Navy suggested she try Navy nursing. Feeling the 2-year commitment wasn't too bad, Janice joined.

Because of her previous experience, Janice was commissioned as a lieutenant, junior grade (O-2). She began her career monitoring seven psychiatric wards as part of a close-knit team with the psychiatrist at the Navy hospital in San Diego.

Her second tour was in Subic Bay, the Philippines. She used her emergency skills there, handling many cases from the Vietnam conflict. The hours were long, but rewarding. During this assignment she used her leave to tour the Far East—Hong Kong, Bangkok, India, and Japan. She also met her husband, when he was on leave from Vietnam.

Janice was recognized not only as an outstanding nurse, but as an excellent leader. Her next few tours took her to hospitals where she directed other nurses and trained Navy hospital corpsmen. Training the hospital corpsmen has been a favorite activity for Janice. Navy corpsmen are often the only medical people on board submarines, small ships, and marine combat units.

Janice was selected for further education. After earning her baccalaureate degree in nursing, she was assigned to Camp Pendleton, CA, and then to Okinawa, a Japanese island. In Okinawa she served as assistant director of nursing services and director of family advocacy for all Navy and Marine Corps families on the island.

Today, Janice assists the admiral who directs the Navy Nurse Corps. She has been at the hub of Navy nursing activity over the past several years. She says, "My experience has given me a lot to share with the young nurses I will be directing in my next tour." She is looking forward to serving as assistant director of nursing at one of the largest naval hospitals in the world.

Looking back over 24 years of service, she says, "I like everything about it. It's never the same, you constantly gain experience, see new places, and never lose seniority."

Military registered nurses care for the sick, injured, and wounded. They are a vital part of the military health care team. As a military nurse, you begin your career administering medications prescribed by doctors, monitoring patients' progress, and training and directing enlisted medical technicians. As you gain experience and your skills increase, you will serve in positions of increasing responsibility. There are opportunities to become director of nursing care activities at a hospital or clinic.

DUTY ASSIGNMENT

Most military nurses work in clinics, hospitals, and medical centers at military bases in the U.S. and overseas. Some work aboard naval vessels and hospital ships. Many are assigned to temporary duty in field hospitals during combat exercises and field maneuvers. Others serve in ambulances, evacuation helicopters, or medivac transport planes. There are good opportunities for overseas assignments, particularly in Europe and the Pacific Islands.

ADVANCEMENT

Military registered nurses must want to serve others. They must be able to deal with their patients' emotional well-being as well as their medical needs. They also need to develop leadership and training skills. Initiative is needed to maintain a high level of patient care.

To advance, nurses must be highly skilled professionals. They must master basic nursing and leadership skills quickly. Seeking varied assignments will increase their professional expertise. Almost all nurses specialize, either by acquiring an advanced degree or through specialty training programs. An excellent performance record, combined with specialization and a variety of increasingly responsible positions, is the key to advancement.

Nurses compete with their peers for promotion and career-enhancing assignments. Only the best-qualified personnel are selected for promotion and competition intensifies with each increase in rank.

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TRAINING

Initial training for nurses includes orientation in military medical administration, nursing programs and procedures, and leadership. Nurses continue to attend seminars, short formal courses, and conferences throughout their careers to improve their nursing and patient care skills. In addition to these programs, they study on their own to stay abreast of advancements in the field.

Almost all nurses have opportunities to obtain nursing specialties and advanced degrees, often in fully funded programs. Clinical programs educate nurses in anesthesiology, pediatric nursing, or other clinical specialties. Educational specialties enable nurses to teach other nurses, patients, or enlisted medical technicians. Special programs in administration train them to manage nursing and hospital programs. Many military nurses will have the opportunity to pursue an advanced degree in a nursing specialty.

Nurses are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. They are usually completed by correspondence.

SPECIALIZATION

After gaining experience as staff nurses, registered nurses may specialize in such fields as mental health, anesthesiology, operating room nursing, nursing education, pediatrics, or nursing administration.

RELATED MILITARY OCCUPATIONS

If you are interested in a medical career, you may also want to consider other military medical occupations. See the Health Care Occupations cluster in the Military Occupations section for descriptions of these occupations. The career of physician and surgeon is also described in the previous military officer career description.

TYPICAL CAREER PATH

Timeline

DIRECTOR OF NURSING CARE

Nurses with outstanding performance records and managerial skills may become directors of nursing care activities at hospitals or other medical treatment facilities. At this level, they:

- Manage all nursing services at their hospital or facility
- Advise medical staff and hospital administration on nursing services
- Direct nursing staff in maintaining approved standards of patient care
- Direct nursing orientation and training programs

15-18 yrs

PATIENT CARE COORDINATOR

Charge nurses who have excellent managerial skills may advance to coordinate nursing services for wards or clinics. Here they:

- Assign nurses to shifts and wards
- Determine the adequacy of nursing care
- Inspect rooms and wards
- Accompany doctors on medical "rounds" to keep informed of special orders
- See that drugs, solutions, and equipment are ordered and records are maintained
- Investigate problems of patients, nurses, and enlisted medical technicians

9-11 yrs

CHARGE NURSE

Staff nurses with excellent patient care skills who show leadership ability may advance to become charge nurses. They are responsible for all nursing activity on a hospital ward. At this level, they:

- Discuss patient conditions and nursing activities during change-of-shift meetings
- Assign staff nurses to patients
- Consult with the patient care coordinator on unusual nursing problems
- Participate in nursing orientation and training programs
- Evaluate performance of staff nurses

4 yrs

STAFF NURSE

After initial training, registered nurses are assigned to patient care duty at a clinical service ward of a hospital or medical center. Typically, staff nurses:

- Take and record "vital signs" of patients, such as temperature, pulse, and blood pressure
- Administer medication prescribed by doctors
- Observe patient condition and reaction to drugs
- Assist doctors during examinations and treatments
- Change or direct the changing of bandages and dressings
- Direct enlisted medical and nursing technicians in routine patient care

SHIP AND SUBMARINE OFFICERS

ARMY
NAVY
COAST GUARD

Ship and submarine officers sail the world's most powerful vessels, from fast-attack submarines to huge aircraft carriers. As a ship or submarine officer, you will lead highly trained enlisted specialists in maintaining and operating the ship's systems. You begin your career leading a team of 10 to 50 enlisted personnel. You may be responsible for maintaining and operating the ship's power plant, missiles and guns, or radar. You will learn to navigate the ship in all weather, day and night. As you gain experience, you will serve in positions of increasing responsibility. There are opportunities to become captain of a surface ship or submarine.

ADVANCEMENT

Ship and submarine officers direct the sailing and combat operations of their vessel. They must complete extensive qualifications programs, learning to navigate and operate their ships in all weather, in any area of the world's oceans. They direct enlisted specialists who maintain and operate the ship's radar, power plants, or weapons systems. Ship and submarine officers must be aggressive, self-motivated, and excellent leaders.

To advance, ship and submarine officers must complete all shipboard qualifications and have outstanding leadership and management records. They must also develop special skills. They may get training in a warfare specialty, such as hunting submarines, or they may pursue an advanced degree.

Ship and submarine officers compete with their peers for promotion and career-enhancing assignments. Outstanding performance in every assignment is the key to success. Only the best-qualified personnel are selected for advancement, and competition intensifies with each increase in rank.

Only the Navy offers a career in submarines. In the Army there are duty assignments involving directing units of landing craft and tugboats. However, there is no typical career path for ship officers.

Profile: James Stoddard

From the time Jim Stoddard was in high school in New York City, he wanted to be a Navy submarine officer and qualified to attend the Naval Academy. "I felt the discipline at the academy would help me get the most out of my education." Adapting well to academy life, he graduated near the top of his class with a degree in Naval Architecture.

After submarine school in Groton, Connecticut, he went on his first submarine to the Western Pacific. Here, he felt the first thrill of command responsibility as an Officer of the Deck. On watch, he directed the "sailing" and safe operations of his submarine. "The Officer of the Deck is completely trusted by the submarine's captain," Jim says, "I was representing the captain and in charge of the vessel and her crew."

Jim worked hard and advanced rapidly. As a lieutenant, he was assigned to graduate studies at the Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution. He went on to nuclear power school and tours in several nuclear-powered ballistic missile submarines.

Jim served tours in all the major departments of a submarine. He mastered engineering, weapons, and operations. As he gained experience, he became a master tactician and assisted the captains of the submarines on which he served. They used their knowledge of the underwater environment to keep their submarine hidden while carrying out missions assigned to their vessel. He was decorated several times for submarine operations and leadership.

During his career Jim and his wife have enjoyed a unique part of Navy life, and a special commitment to each other. Whenever possible, she joined him at the ports his submarines would visit. They spent time together in Australia, England, Germany, and many ports elsewhere in the world.

Today he is the captain of a nuclear attack submarine. Jim says he has most enjoyed the responsibility of each assignment. "And," he adds, "I have really seen the world."

DUTY ASSIGNMENT

Ship and submarine officers live and work in their vessels at sea. While in port, they spend the workday aboard their ship. They may travel to locations around the world, and some ships and submarines have "home ports" in the Pacific Islands or Scotland. At regular points in their careers, officers are assigned to a job on shore, usually in offices. Ship and submarine officers typically serve a number of tours on sea duty throughout their career.

SPECIALIZATION

Officers of surface ships must have a broad knowledge of their vessel. In addition, they usually focus on one specific area of their ship, such as engineering (power plants, pumps, or fuel systems), combat systems (weapons or electronics operation and maintenance), or operations (tactics and navigation). Some ships are nuclear-powered and require officers trained in nuclear reactor operation. All submarine officers are nuclear qualified. As they advance to senior-level assignments, ship officers are expected to learn about more areas in greater depth.

Because a submarine is a smaller self-contained unit, submarine officers must have a detailed knowledge of their vessel and all its systems.

When assigned ashore, officers often specialize in areas that will help them in senior staff positions later in their career. These "second careers" may be in personnel management, fleet operations planning, or management of programs to develop or buy large weapons systems.

TRAINING

Initial training for ship officers includes 15 weeks of classroom instruction. Training covers ship operations, naval tactics, navigation, and the responsibilities of each department aboard ships. After they attend "Surface Warfare Officer School," officers may be further trained for their first assignment aboard ships such as cutters, destroyers, battleships, or aircraft carriers.

Training for submarine officers begins with 12 months of courses on nuclear power. Following nuclear power school, they attend submarine basic school to learn submarine operations and tactics.

Both ship and submarine officers receive advanced training throughout their careers. They often get technical training in such areas as sonar, radar, missile systems, and power plants. They may attend graduate school for advanced degrees.

Ship and submarine officers also have opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. They may be completed either by correspondence or full-time study.

RELATED MILITARY OCCUPATIONS

If you are interested in a career as a ship or submarine officer, you may also want to consider a career in transportation management or some other transportation occupation. See the Transportation Occupations and Executive, Administrative, and Managerial Occupations clusters in the Military Occupations section of this book for descriptions of these occupations.

TYPICAL CAREER PATH

Timeline

SHIP CAPTAIN

Executive officers who have consistently shown outstanding leadership and technical ability may be selected to be ship or submarine captains. At this level, they:

- Command the operations of a ship or submarine and crew
- Study orders and plan exercises and maneuvers to carry out missions
- Direct daily operations and plan tactics
- Direct the planning of fleet operations exercises as part of a naval staff

15-18 yrs

EXECUTIVE/STAFF OFFICER

Department heads with broad experience and outstanding leadership abilities may advance to second-in-command (executive officer) of a ship or submarine. At this level, they:

- Issue orders and instructions to assist the ship's captain in daily operations
- Manage administrative and maintenance activities
- Command the ship or submarine in the captain's absence
- Plan fleet exercises as part of a naval staff

9-11 yrs

DEPARTMENT HEAD

Division officers who show leadership potential in several ship divisions may advance to become department heads. Department heads:

- Manage a major department such as engineering, navigation/operations, or combat systems
- Train new officers in seamanship and leadership
- Plan and coordinate the department's activities
- Conduct drills to evaluate the department's performance in emergency or combat situations
- Evaluate the performance of division officers

4 yrs

DIVISION OFFICER

After initial training, new ship and submarine officers are assigned to their first vessel as division officers. Here they:

- Lead a division of 10 to 50 sailors
- Stand watches in the engine room, ship's bridge, or ship's weapons systems control center
- Plan daily and long-term work schedules
- Plan and monitor the training of sailors in their division
- Evaluate performance of enlisted personnel

SUPPLY AND WAREHOUSING MANAGERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Profile: Benjamin Travis

Ben Travis wanted to serve in the military. He also wanted a college education and a chance to play college basketball. So he applied for and was selected to attend the U.S. Coast Guard Academy, where he lettered in basketball 3 years.

Like many Coast Guard officers, Ben served two tours of general duty before he specialized. He requested for his first assignment a tour as gunnery (or weapons) officer on a Coast Guard cutter going to Vietnam. His ship gave gunfire support to U.S. soldiers and Marines on land.

Back in the States, Ben married his girlfriend, whom he had met while he was a cadet at the Academy. They enjoyed living in Miami Beach, the site of his next tour. Here, Ben commanded a 95-foot patrol boat and a crew of 15 men. He and his crew rescued stranded boats and enforced customs and maritime law in the Miami area.

Ben's next assignment was to graduate school, where he earned an M.B.A. in one intense year of study. Always interested in finance, he specialized in supply and warehousing management. (The Coast Guard calls supply officers "comptrollers.")

As a lieutenant, his first comptroller assignment was with the 7th Coast Guard District in Miami, developing and managing a budget of $35–$45 million. Ben says, "I really enjoyed the independence and responsibility of that job."

As he advanced, he served in positions of more authority. As a lieutenant commander in Washington, D.C., he briefed congressmen, senators, and other government officials on Coast Guard budget and procurement plans. He also enjoyed several general duty tours outside his occupational specialty. He especially enjoyed a tour as executive officer of a large Coast Guard cutter.

Now in Washington, D.C., with the rank of commander, Ben develops comptroller policies for the Coast Guard and oversees procurement of every item the Coast Guard buys, anywhere in the world. Reflecting on his career he says, "So far, I honestly haven't had an assignment that I didn't enjoy. The variety, the challenges, and the responsibility have been tremendously rewarding."

No military force can function without supplies. Supply and warehousing managers make sure our military units around the world have the food, weapons, uniforms, trucks, airplanes, fuel, and spare parts they need to fulfill their missions. As a supply and warehousing manager, you will buy, store, issue, and keep track of vast quantities of equipment and material. You begin your career leading a small group of enlisted specialists in one type of supply such as food, petroleum, or parts. As you gain experience, you will serve in positions of increasing responsibility. There are opportunities to become the supply and warehousing director of a large military base or major command area.

DUTY ASSIGNMENT

Most supply and warehousing managers work in offices, warehouses, and material-handling facilities at military bases in the U.S. and overseas. They work in facilities similar to wholesale, retail, and warehouse operations in the civilian world. Some supply and warehousing managers are assigned to ships or air units. Many serve temporary duty assignments in the field during combat exercises and maneuvers. There are significant opportunities for overseas assignments, particularly in Europe and the Pacific Islands.

RELATED MILITARY OCCUPATIONS

If you are interested in a career as a supply and warehousing manager, you may also want to consider a career in purchasing and contract management, transportation management, or a related field. See the Executive, Administrative, and Managerial Occupations cluster in the Military Occupations section of this book for descriptions of these occupations. The career path of a transportation manager is described in the next military officer career path description.

ADVANCEMENT

Supply and warehousing managers are vital to every military operation. They must be excellent planners, organizers, and leaders. From the first, they are entrusted with large quantities of valuable materials. They must become expert at using the supply system. Basic skills include purchasing, storage, and accounting for supply items.

To advance, supply and warehousing managers must have excellent records of performance. Their accounting skills must be outstanding, supplies must arrive at the right places at the right time, and they must show excellent leadership. As they master the supply system, they are assigned to positions of greater responsibility. They manage larger areas and lead more supply personnel. To advance to the most senior positions, supply and warehousing managers must seek out, and do well in, leadership and command positions. An advanced degree is helpful when combined with a record of outstanding performance.

Supply and warehousing managers compete with their peers for promotion and career-enhancing assignments. Only the best-qualified personnel are selected for advancement, and competition intensifies with each increase in rank.

SPECIALIZATION

Supply and warehousing managers may specialize in such areas as bulk petroleum storage and handling, aerial delivery of supplies, or supply and material management. With an advanced degree, they may also specialize in such areas as computer science, financial management, or weapons and material contracting and purchasing.

TRAINING

Initial training for supply and warehousing managers includes 3 to 6 months of intensive classroom instruction. Officers are trained to use and manage their services' supply system. Budget management, ordering, storage, distribution, and leadership are some of the subjects they study. Depending on their assignment, supply and warehousing managers may also be trained in petroleum management, food management, or aerial cargo delivery.

Advanced training prepares supply and warehousing managers for more responsible positions. Officers may be trained to operate computerized inventory and planning systems, to manage large warehouses and storage depots, or to prepare and manage major contracts with companies supplying the armed forces.

Almost all supply and warehousing managers earn advanced degrees. Some attend schools in programs funded by their service, others obtain degrees on their own after duty time. Degrees in computer sciences, industrial management, and business administration are particularly helpful.

Supply and warehousing managers are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. They may be completed either by correspondence or full-time study.

TYPICAL CAREER PATH

Timeline

SUPPLY AND WAREHOUSING DIRECTOR

Supply staff officers with outstanding records may advance to direct major supply and warehousing activities. At this level, they:

- Command a supply facility or direct the supply operations at a military base
- Advise senior service commanders on logistics and supply management
- Evaluate bids and proposals submitted by suppliers
- Conduct inspections of supply units

15-18 yrs

SUPPLY STAFF OFFICER

Senior supply officers who have demonstrated leadership in a series of assignments may advance to become supply staff officers. At this level, they:

- Assist the supply and warehousing director in administrative and management duties
- Help headquarters staff officers plan supply requirements for operational missions
- Analyze purchasing and distribution patterns
- Direct and evaluate studies to improve supply methods

9-11 yrs

SENIOR SUPPLY OFFICER

Supply officers who do well in a variety of supply assignments advance to more demanding supply management duties. At this level, they:

- Manage a supply or warehouse operation, directing other officers and enlisted personnel
- Train new supply officers
- Advise commanding officers of supply requirements
- Inspect their supply facilities

4 yrs

SUPPLY OFFICER

After initial training, new supply officers are assigned to a supply unit, where they gain experience in supply and warehouse operations. At this level, they:

- Direct civilian or military personnel in ordering, receiving, and issuing equipment and supplies
- Direct task assignments and prepare duty assignment and management reports
- Inspect storage facilities, giving instructions on material handling and safety
- Evaluate the performance of personnel working under their leadership

TRANSPORTATION MANAGERS

ARMY
NAVY
AIR FORCE
MARINE CORPS
COAST GUARD

Transportation managers run the trucking, air, rail, and sea transportation system that moves military equipment, supplies, and personnel all over the world. As a transportation manager, you will direct a part of that system. You begin by leading a team of trained enlisted specialists. You may direct heavy trucking, landing craft, or air terminal operations. As you gain experience, you will serve in positions of greater responsibility, directing larger operations. There are opportunities to become director of transportation for a group of military bases or a major command area.

DUTY ASSIGNMENT

Transportation managers work in a variety of locations at military bases in the U.S. and overseas. Their "office" may be the deck of a large landing craft or the flight line of an air cargo terminal. They may also work in an office at a port or a truck motor pool. Many transportation managers support troops in the field during combat exercises and maneuvers. Some managers work in Washington, D.C., where most of the military's logistics planning takes place. There are good opportunities for overseas assignments, particularly in Europe and the Pacific Islands.

RELATED MILITARY OCCUPATIONS

If you are interested in a career in transportation management, you may also want to consider a career in transportation maintenance or supply and warehousing management. See the Executive, Administrative, and Managerial Occupations cluster in the Military Occupations section of this book for descriptions of these occupations. The career in supply and warehousing management is also described in the previous military officer career description.

Profile: Dennis Kronchek

Dennis Kronchek went to work on an automobile assembly line right after high school. Knowing he would probably be drafted, he chose the Army and enlisted. Dennis did so well in aircraft maintenance training, he was encouraged to apply for Officer Candidate School, where he earned his commission. He chose the transportation corps because he wanted to stay close to aircraft and maintenance.

Dennis spent his first tour in Vietnam, leading a platoon in aircraft maintenance. After that tour he held several more responsible positions in the United States.

At the end of his obligated service, Dennis went back to civilian life and attended school full-time on the GI Bill. After 2 years, the Army offered him the chance to return to active duty. He and his wife thought it over. Remembering the variety and challenge of Army life, they decided to return.

Dennis spent a year in Vietnam, then a long tour in Okinawa, where his family joined him. He then returned to the States, where he completed his bachelor's degree with full funding from the Army and the GI Bill, and his master's degree in transportation management, with partial funding from the Army.

Dennis also earned a secondary specialty in the supply field and began a series of assignments leading units of increasing size. In one of these jobs he directed the transportation of all personnel and supplies for an armored division.

A high point in his career was a 2-year tour as Army port and air terminal expert with the Navy. Dennis arranged the transportation to move people and supplies to and from the U.S. scientific research stations in Antarctica. He says, "I worked with private and government transportation agencies and officials from the United States, Australia, and New Zealand."

Dennis has spent the past several years at the Pentagon in Washington, D.C., as chief logistician for the Pacific. He is the expert on all Army transportation and supply activity in the Pacific.

Just selected for his next assignment, Lieutenant Colonel Dennis Kronchek will assume command of one of the 6 Army transportation movement control centers in the world. "It's going to be fun," he says. "It's a new challenge, in a new area for me. My command will control movement of Army personnel, equipment, and supplies through the transportation network to destinations around the world."

ADVANCEMENT

Transportation managers must be excellent leaders, planners, organizers, and problem solvers. They must understand military and civilian air, land, and water transportation systems. Good judgment and careful coordination are needed to avoid costly and time-consuming "bottlenecks" in the system.

To advance, transportation managers must have an outstanding performance record in positions of increasing responsibility. They must get people and cargo to the right destination at the right time. As they master the transportation system, they are assigned positions directing larger and more diverse transportation units. Many transportation managers obtain advanced degrees. An advanced degree, when combined with excellent performance, increases the chances for promotion.

Transportation managers compete with their peers for promotion and career-enhancing assignments. Only the best-qualified are selected, and competition intensifies with each increase in rank.

In the Navy and Coast Guard, there are duty assignments involving transportation management. However, there is no true career path for transportation managers.

SPECIALIZATION

Some transportation managers specialize in a particular mode or type of transportation operation. Specialties include ground and rail transportation; air, marine, and sea terminal operations; and traffic management.

TRAINING

Initial training for transportation managers includes up to 5 months of both classroom and field instruction. Training covers transportation policy, maintenance and operation of vehicles and equipment, planning, and leadership. This instruction prepares officers for their first assignments.

Transportation officers have opportunities for advanced training to prepare them for future assignments. Courses may include budgeting, combined transportation specialty operations, or management development. Many transportation managers also receive specialty training in areas such as marine terminal operations, air transportation management, or truck transportation.

Most transportation managers earn master's degrees. Some attend school in a program funded by their service, others obtain degrees on their own after duty time. Degrees in transportation management, computer sciences, logistics management, and systems analysis are particularly helpful.

Transportation managers are also given opportunities for professional military education to prepare them for senior officer positions. These programs include study of military subjects such as strategy, tactics, and planning large-scale operations. They may be completed either by correspondence or full-time study.

TYPICAL CAREER PATH

Timeline

TRANSPORTATION DIRECTOR

Outstanding transportation staff officers may advance to become transportation directors. At this level, they may:

- Command a truck or boat transportation battalion
- Direct an air transport terminal at a major air base
- Advise major base and senior area commanders on transportation matters
- Direct inspection programs for transportation activities they command

15-18 yrs

TRANSPORTATION STAFF OFFICER

Senior transportation officers with leadership experience and excellent records of performance may advance to become transportation staff officers. Here they may:

- Coordinate with other military services to transport supplies from air, sea, or land bases to troops in the field
- Develop long-range plans for use of transportation equipment and personnel
- Evaluate new transportation procedures and equipment
- Advise combat commanders on transportation matters
- Teach transportation courses

9-11 yrs

SENIOR TRANSPORTATION OFFICER

Transportation officers who perform well and who are good leaders may advance to become senior transportation officers. At this level, they:

- Inspect transportation, maintenance, or operations facilities
- Command companies of trucks, landing craft, or tugboats
- Plan missions and operations to support base and field operations
- Evaluate the performance of transportation officers and senior enlisted personnel

4 yrs

TRANSPORTATION OFFICER

After initial training, transportation officers are assigned to truck, air, boat, port (harbor), or terminal units. Typically, they:

- Direct enlisted personnel in operating and maintaining transportation equipment
- Schedule equipment use
- Train personnel in transportation procedures
- Prepare reports showing the use and costs of operations

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Career Mapping

As you progress in your career, you will probably move to new jobs or positions. For civilians, this often means changing employers. For those in the military, this involves a change in duty assignments, or jobs, every few years.

It is often assumed that change must mean advancement—taking on more difficult work assignments or added responsibilities, such as supervising others. In addition to moving upward in organizations, some people also make lateral and downward moves at some time in their lives. Not all people are motivated by change to a higher status position or one offering more responsibility and money. For some people, it is more important to learn additional skills or to work in an area that is personally satisfying.

One way to analyze a person's work experiences is to create a "career map." On the following pages are the career maps of four individuals. Figures A and B illustrate the job changes of two individuals who began their careers as apprentice carpenters. Gary Caruso is a civilian; Frank Dalton has been with the Air Force since he enlisted in 1970. Their profiles appear on page 438. Roberta Mathews and Phil Thompson, whose career maps are shown in Figures C and D, are engineers. Roberta is a civilian, while Phil has spent his entire work life in the Navy. Their profiles are on page 439.

To understand the career maps, begin on the left side of the page. The individual's first jobs, employer or location, and the time spent there are shown in the first column. Each new job or position is indicated by a different box. If the person changed employers or locations, this change appears in a new column. If the change was an upward, downward, or lateral move, this is reflected by showing it at a higher, lower, or similar place either within or across columns.

As you review these four maps, look for the following:

- Types of changes made — note that all made lateral and upward moves. Figure A shows that Gary Caruso also made a downward move when he left Eckman Construction, Inc. and joined KLM Land Developers.
- Number of changes made — because people in the military change duty assignments every few years, the career maps of Frank Dalton and Phil Thompson have more columns than their civilian counterparts. This continuing opportunity for change in work type and location is what attracts many people to the military. Roberta Mathews had fewer employers, but she made changes within the organizations for which she worked.
- Future changes — these maps only reflect the past and present. It is also useful to create career maps that include the future. Imagine next steps for each of the four individuals. At some point Frank and Phil will leave the military. What options do you think they will have when they return to civilian life?

You can use the "Typical Career Path" and "Profile" sections to create career maps for any of the career path descriptions in this book. You can also develop career maps by interviewing people whose careers interest you. Finally, you may want to create your own career map. It is another resource to help you as you plan for your future.

Figure A
Career Map for Gary Caruso

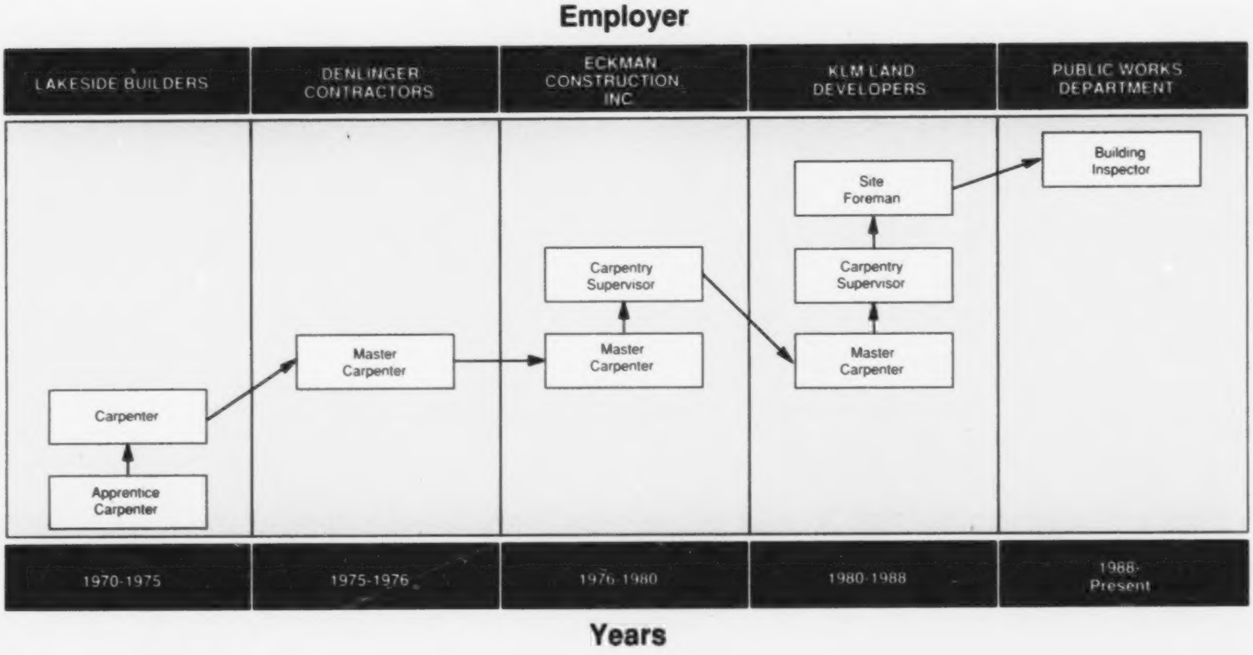

Employer
LAKESIDE BUILDERS
DENLINGER CONTRACTORS
ECKMAN CONSTRUCTION INC
KLM LAND DEVELOPERS
PUBLIC WORKS DEPARTMENT
Apprentice Carpenter
Carpenter
Master Carpenter
Master Carpenter
Carpentry Supervisor
Master Carpenter
Carpentry Supervisor
Site Foreman
Building Inspector
1970-1975
1975-1976
1976-1980
1980-1988
1988-Present
Years

Figure B
Career Map for Frank Dalton

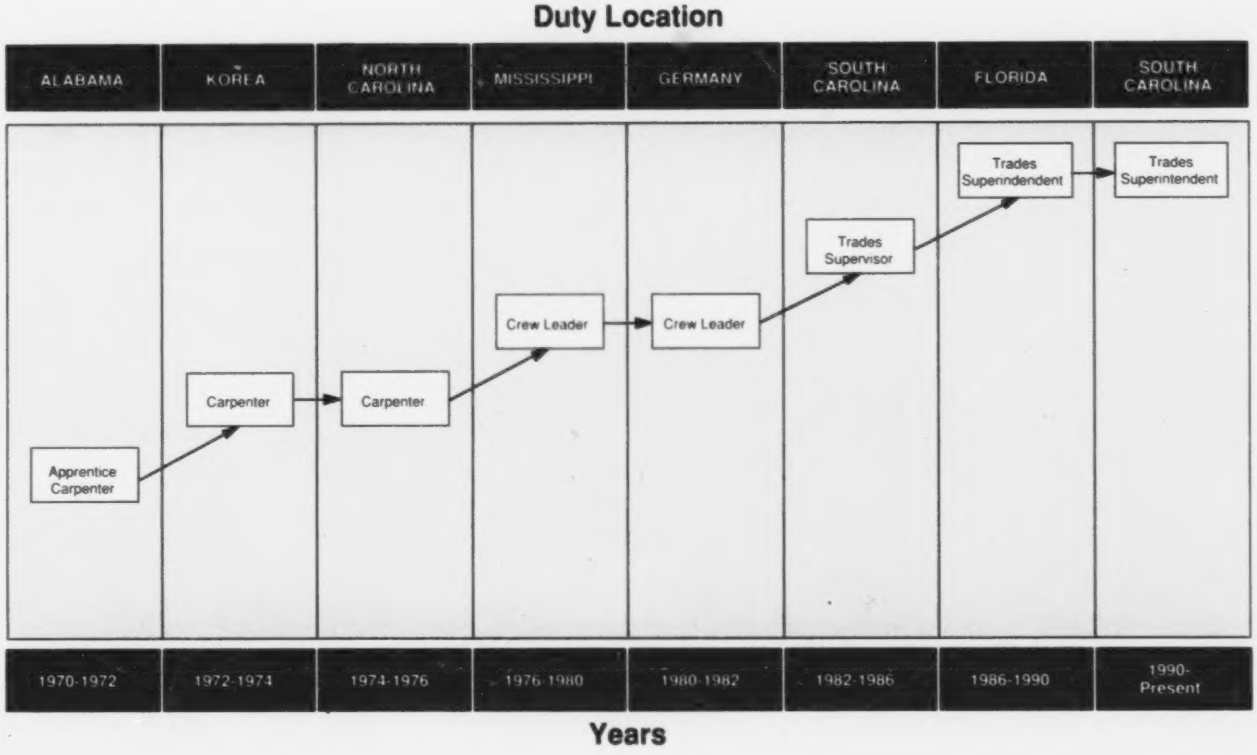

Duty Location
ALABAMA
KOREA
NORTH CAROLINA
MISSISSIPPI
GERMANY
SOUTH CAROLINA
FLORIDA
SOUTH CAROLINA
Apprentice Carpenter
Carpenter
Carpenter
Crew Leader
Crew Leader
Trades Supervisor
Trades Superindendent
Trades Superintendent
1970-1972
1972-1974
1974-1976
1976-1980
1980-1982
1982-1986
1986-1990
1990-Present
Years

Figure C
Career Map for Roberta Mathews

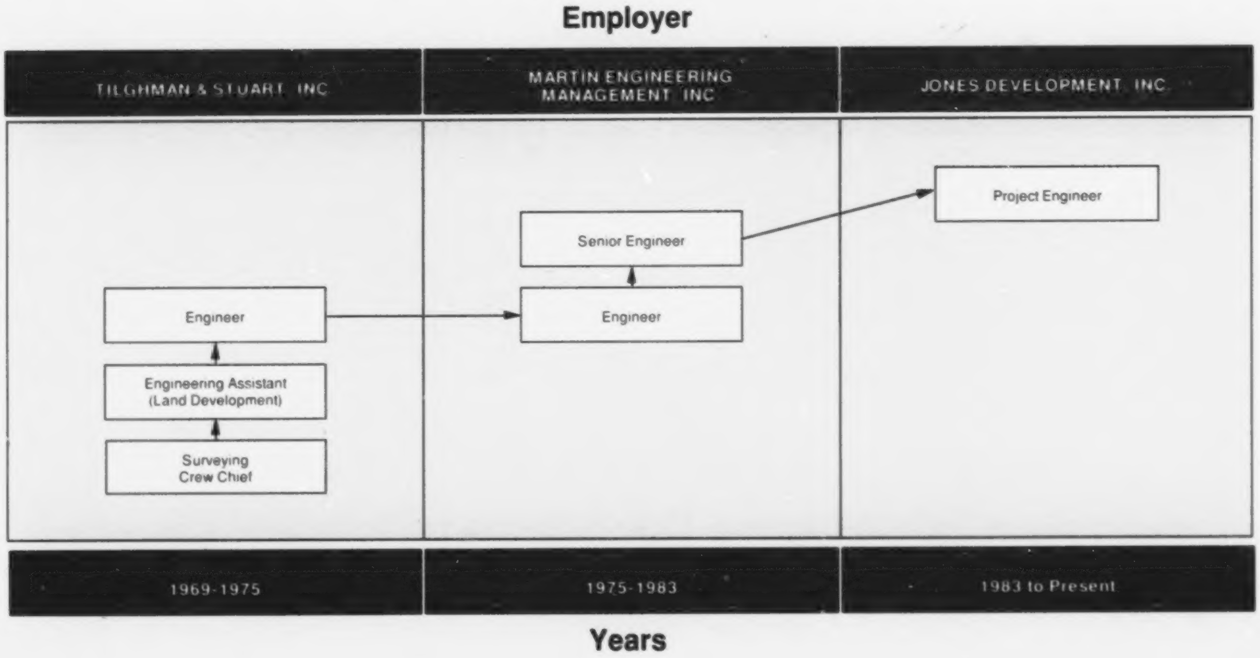
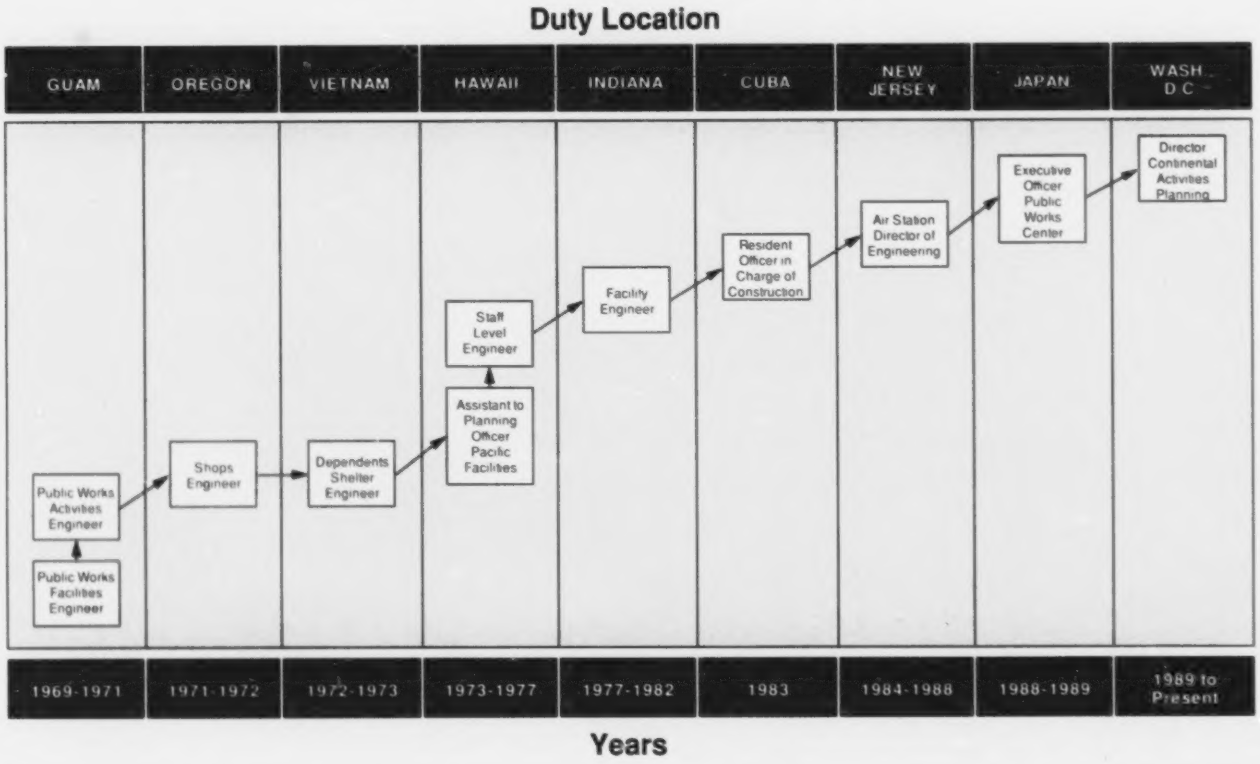

Employer
TILGHMAN & STUART, INC.
MARTIN ENGINEERING MANAGEMENT, INC.
JONES DEVELOPMENT, INC.
Surveying Crew Chief
Engineering Assistant (Land Development)
Engineer
Engineer
Senior Engineer
Project Engineer
1969-1975
1975-1983
1983 to Present
Years

Figure D
Career Map for Commander Phil Thompson


Duty Location
GUAM
OREGON
VIETNAM
HAWAII
INDIANA
CUBA
NEW JERSEY
JAPAN
WASH. D.C.
Public Works Facilities Engineer
Public Works Activities Engineer
Shops Engineer
Dependents Shelter Engineer
Assistant to Planning Officer Pacific Facilities
Staff Level Engineer
Facility Engineer
Resident Officer in Charge of Construction
Air Station Director of Engineering
Executive Officer Public Works Center
Director Continental Activities Planning
1969-1971
1971-1972
1972-1973
1973-1977
1977-1982
1983
1984-1988
1988-1989
1989 to Present
Years

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Glossary

Glossary of Military Terms

Active Duty - Continuous duty on a daily basis. Comparable to "full-time" as used in reference to a civilian job.

Allowances - Money, other than basic pay, to compensate in certain specified situations for expenses such as meals, rent, clothing, and travel. Also, compensation is given for maintaining proficiency in specific skill areas such as flying or parachuting.

Artillery - Large cannons or missile launchers used in combat.

ASVAB - Armed Services Vocational Aptitude Battery. A test that provides students with academic and vocational aptitude scores to assist them in career exploration and decision-making. ASVAB scores are used by the military services to determine enlistment eligibility and assign occupational specialties.

Base - A locality or installation which a military force relies on for supplies or from where it initiates operations.

Basic Pay - The amount of pay a military member receives, as determined by pay grade and length of service. Basic pay does not include other benefits such as allowances and bonuses.

Basic Training - A rigorous orientation to the military lasting from six to ten weeks which provides a transition from civilian to military life.

Civilian - Anyone not on active duty in the military.

Commissary - A store on a military base that sells groceries and other items at a substantial discount to military personnel.

Commissioned Officer - A member of the military holding the rank of second lieutenant or ensign or above. Their role in the military is similar to that of a manager or executive.

DEP - Delayed Entry Program. A military program where an applicant delays entry into active duty for up to one year, for such things as finishing school, etc.

Drill - To train or exercise in military operations.

Duty - Assigned task or occupation.

Enlisted Member - Military personnel below the rank of warrant or commissioned officers. Their role is similar to that of a company employee or supervisor.

Enlistee - Someone who has been accepted by the military and has taken the Oath of Enlistment.

Enlistment Agreement/Enlistment Contract - A legal contract between the military and an enlistment applicant, which contains information such as enlistment date, term of enlistment, and other options such as a training program guarantee or a cash bonus.

GI Bill Benefits - A program of education benefits for individuals entering the military. This program enables service persons to set aside money to be used later for educational purposes.

Inactive Reserve Duty - Affiliation with the military in a non-training, non-paying status after completing minimum obligation of active duty service.

Infantry - Soldiers trained, armed, and equipped to fight on foot.

Job Specialty - A specific job or occupation in one of the five services.

MEPS - Military Entrance Processing Stations, which are located around the country. The enlistment process occurs at each of these stations.

NCO - Non-commissioned Officer. An enlisted member in pay grades E-4 or higher.

Obligation - The period of time one agrees to serve on active duty, in the reserve, or a combination of both .

OCS - Officer Candidate School. Program for college graduates with no prior military training who wish to become military officers. Also, qualified enlisted members who wish to become officers may attend OCS. After successful completion, candidates are commissioned as military officers.

OTS (OTG) - Officer Training School (Group). See OCS, Officer Candidate School.

Officer - See commissioned officer.

Pay Grade - A level of employment, as designated by the military. There are 9 enlisted pay grades and 10 officer pay grades through which personnel can progress during their career. Pay grade and length of service determine a service member's pay.

Quarters - Living accommodations or housing.

Recruit - See enlistee.

Regular Military Compensation - Total value of basic pay, allowances, and tax savings, which represents the amount of pay a civilian worker would need to earn to receive the same take home "pay" as a service member.

Reserves - The Reserves are those people in the military who are not presently on full-time, active duty. In a national emergency, reservists can be called up immediately to serve on active duty because they are highly trained by the services and drill regularly. During peacetime, they perform functions in support of the active duty forces in our countries defense, such as installation and repair of communications equipment. Reservists are also entitled to some of the employment benefits available to active military personnel.

ROTC - Reserve Officers Training Corps. Training given to undergraduate college students who plan to become military officers. Often they receive scholarships for tuition, books, fees, uniforms, and a monthly allowance.

Service Classifier - A military information specialist who helps applicants select a military occupational field.

Service Obligation - The amount of time an enlisted member agrees to serve in the military, as stated in the enlistment agreement.

Station - A place of assigned duty.

Tour of Duty - A period of obligated service. Also used to describe a type of duty tour, such as a "Mediterranean tour."

Indexes

DOT Code Index (by DOT Number)

This index lists civilian counterparts to the 197 military occupations described in the Military Occupations section. The 719 civilian occupations listed here are in numerical order by their Dictionary of Occupational Titles (DOT) codes. The DOT, published by the U.S. Department of Labor, defines and classifies over 12,000 civilian occupations found in the U.S. labor force. Civilian occupations involve performance of essentially the same tasks and require the same knowledge, skills, and abilities as their counterpart occupations in the military.

The page number listed for each DOT code and title indicates the location of that military occupational description in the Military Occupations section. This index is useful when you know a DOT code and want to find out whether it has a military counterpart. The index is also useful as a general reference list of civilian occupations that have military counterparts described in the Military Occupations section.

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This index lists civilian counterparts to the 197 military occupations described in the Military Occupations section. (The organization of this index is similar to the organization of the military occupations in the Table of Contents.) Below each military occupation, the counterpart civilian occupations are listed according to their Dictionary of Occupational Titles (DOT) codes.

The DOT Code Index is useful when you want to find civilian counterparts to the military occupations described in this guide. Knowledge of how military training and employment relates to civilian employment may be helpful in career planning. DOT codes may also be used to help locate additional information in other publications about any civilian counterpart occupation (for example, the *Dictionary of Occupational Titles* and *Occupational Outlook Handbook*).

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131.267-014	NEWSWRITER
131.267-018	REPORTER
132.017-010	EDITOR, MANAGING, NEWSPAPER
132.017-014	EDITOR, NEWSPAPER
132.037-018	EDITOR, DEPARTMENT
132.037-022	EDITOR, PUBLICATIONS
132.267-014	EDITORIAL ASSISTANT
962.264-010	EDITOR, FILM

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078.264-010	HOLTER SCANNING TECHNICIAN
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078.362-022	ELECTROENCEPHALOGRAPHIC TECHNOLOGIST
078.362-030	CARDIOPULMONARY TECHNOLOGIST
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078.281-010	CYTOTECHNOLOGIST
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203.362-022	WORD-PROCESSING-MACHINE OPERATOR
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The Title Index is useful if you know the name of an occupation and want to find out whether it is available in the military. For any title listed in the index, you can read the description of what the occupation is like in the military by turning to the page number listed next to it. If you do not find the exact title you are interested in, try to find a similar title under which the same occupation might be listed.

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